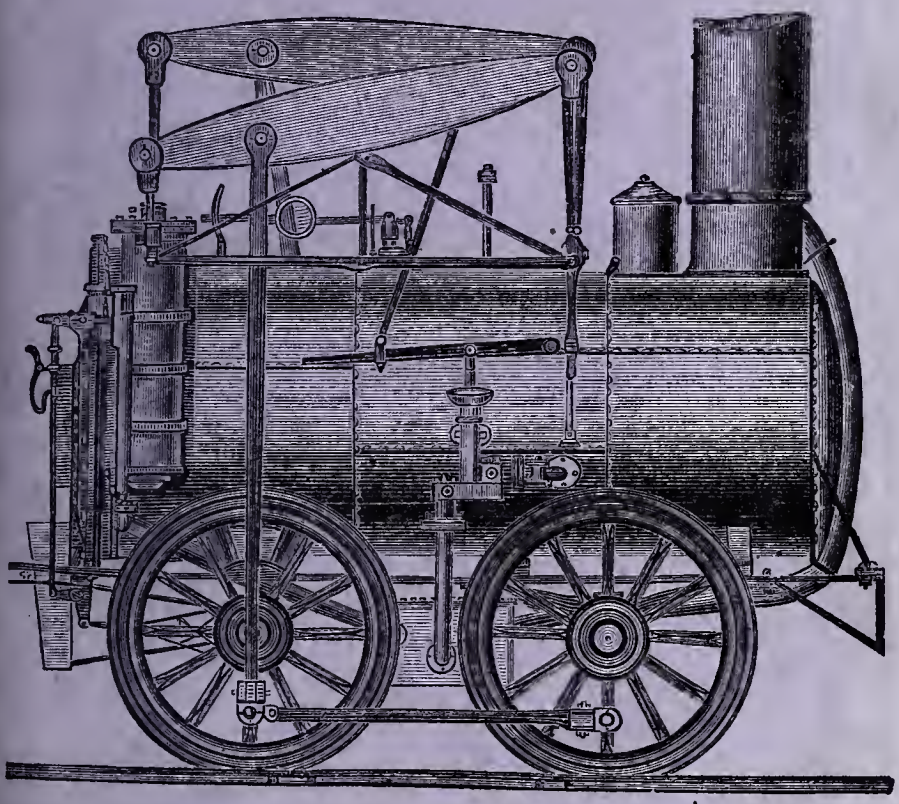
HISTORY

OF THE

FIRST LOCOMOTIVES

IN

AMERICA.

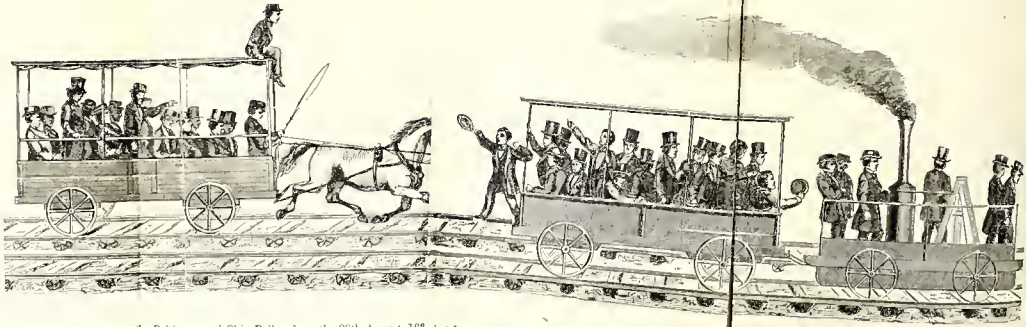


POPULAR EDITION.

By WM. H. BROWN.

PHILADELPHIA:
BARCLAY & CO., PUBLISHERS,
No. 21 NORTH SEVENTH STREET.

Exciting Race between Mr. Peter Cooper's Locomotive, "Tom Thumb," and a Horse-Car.



The trial took place on the Baltimore and Ohio Railroad, on the 28th August, 183 sketch represents the moment the Engine overtook and passed the Horse-Car, the passengers filled with excitement. See Mr. Latrobe's description.)

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HISTORY

OF THE

FIRST LOCOMOTIVES

IN

AMERICA,

TOGETHER WITH OTHER

VALUABLE AND INTERESTING INFORMATION

FROM

ORIGINAL DOCUMENTS

AND

TESTIMONY OF LIVING WITNESSES.

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Entered according to Act of Congress, in the year 1877, by
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FIRST LOCOMOTIVES IN AMERICA.

CHAPTER I.

INTRODUCTION.

THERE is, perhaps, at the present day no subject of such magnitude upon which the community at large is so poorly informed as the history and advent of the first locomotives in America; in what year they were built, where they were constructed, and upon what railroads they were first introduced and employed in the actual service of a company. Especially less informed upon this subject are the very men who, above all others, should be thoroughly conversant with all the particulars in the history of that wonderful machine—that powerful instrumentality which now contributes so much towards the maintenance and employment of a large class of the industrious portion of our community, viz., the officers, engineers, firemen, machinists, laborers, and, in short, all employees connected with railroad service. This melancholy lack of information can only be attributed to a want of an opportunity to obtain the requisite facts from some reliable source, and where they are placed in such a form as would bring them within the reach of the masses of the community. True it is volumes have been published giving accurate accounts of the early experiments and subsequent improvements in self-propelling machines or locomotives in England, but these works are too rare and expensive to be in general circulation, and entirely beyond the reach of a large class who are interested in the subject; and even then they bring the history down only to a period anterior to the date of railroad enterprise in this country, while all the information upon the subject since that time (a period of less than half a century, and within the lifetime of millions in our community) seems to be wrapped in impenetrable mystery. To obviate this difficulty for the future, and to give to the public at large all the information upon the subject from the most reliable sources, the author was induced some two or three years since to compile a work entitled "The History of the First Locomotives in America," which was published for him by the well-known house of D. Appleton & Co., of New

York, in which work all the evidences upon the subject in days, dates and incidents attending the advent of the iron horse into America are set forth before the reader. Even this history, the author finds, is yet beyond the reach of many of the working-class of machinists and artisans generally, and many others in the community who are desirous of obtaining reliable information upon this interesting topic. This want the author is determined to supply by issuing the present little work, which, while it contains and sets forth all the facts upon the subject, though in a condensed form, will bring it clearly within the reach of all.

Another influence which induced the author to publish his former work arises from the fact that within the last ten or fifteen years, and under a variety of names, he has often seen and read in our public journals nearly as many different accounts of the early locomotives in America as the number of years which have elapsed since their introduction, all purporting to be truthful histories of the first locomotives in America. Not one of these accounts claiming priority furnish the slightest evidence to sustain the claim of being the pioneer in this great mechanical achievement of the present century, which has revolutionized the trade and commerce of the civilized world.

CHAPTER II.

THE FAMOUS PICTURE CALLED THE "JOHN BULL."

SOME ten or fifteen years ago a lithograph picture representing a locomotive and two cars filled with passengers, executed in black defined outline, was issued from the lithographic establishment of Messrs. Sage & Sons, of Buffalo, purporting to be a copy from an original picture in the possession of the Connecticut Historical Society at Hartford. It has been widely circulated throughout the country, and is said to represent the first locomotive and train in America. This engine is often represented to be the "John Bull" from England, and the engineer, John Hampson, an Englishman. This same picture in the Historical Society room at Hartford was in 1870 published by a party in Boston styled the "Antique Publishing Company of Boston," and the engine is again represented as the English locomotive "John Bull," and John Hampson as the engineer. Messrs. Howard & Co., of Hartford, also issued copies of this original picture, but, like all the others, they were ignorant of the true character of it. During the Centennial Exhibition in Philadelphia this picture, copied from the same original, was sold to hundreds and thousands by

two characters dressed as Continentals, and daily to be seen in front of Independence Hall; and thousands who bought these copies look upon them as the first locomotive and train in America; but the purchasers have been egregiously deceived, not, perhaps, by the design of the publishers and vendors as from their total ignorance of the subject.

The original picture was executed by the author of this work, and presented to the Society at Hartford in 1831, a few months after it was executed in Albany. The full particulars will be given in its proper place in this brief history, and the author for the present will merely state that the engine represented was not the "John Bull," nor was the engineer on the occasion John Hampson, an Englishman, but was an American-built locomotive and an American engineer, who is still alive and well, according to a letter received by the author from the veteran, dated February 7, 1876.

Such blunders and misstatements as we have just alluded to are calculated to mislead the public and involve the early history of the locomotive in America in a cloud of obscurity.

Numerous are the claims to the first locomotive run in America, and what railroad ordering the first locomotive to be built for actual service. Sometimes we have heard that credit awarded to the State of New York, sometimes to Pennsylvania, and oftentimes to the State of Massachusetts, and, oftener still, to Connecticut. Some who profess to be well posted upon this point claim the honor for the old Portage Road, in Pennsylvania, while others, equally certain on that point, give the credit to the Germantown and Norristown Railroad, and so on through the catalogue of railroads not very voluminous at that early day. True it is that several of these companies, even at an early day, had locomotives constructed for their use and put them in practical operation upon their roads, but not until the experiment had been tried and successfully inaugurated in another quarter.

In recording the facts from which these pages are briefly made the author accompanies each position he assumes with all the evidences upon which his statements are founded. These authorities are from living witnesses, who are at this day, though far advanced in years, endowed with all the vigor of mind which characterized them in the early period of their lives, and enjoy an enviable share of the confidence and esteem of their fellow-citizens.

CHAPTER III.

WELL-KNOWN NAMES IN THE EARLY DAYS OF RAILROAD ENTERPRISE.

THE names of John B. Jervis, Horatio Allen, Benj. H. Latrobe, Ross Winans, Julius D. Petsch, of Charleston, S. C., and Peter Cooper are well known and identified with the early days in railroad enterprise and the locomotive in America.

John B. Jervis, Esq., has for many years resided at Rome, in the State of New York; he is now over eighty years of age, and is ranked as one of the ablest and most skilful engineers of the period of which we write. He was the chief engineer of the railroad that imported from England the first locomotive that turned a driving-wheel upon the American con-

JOHN B. JERVIS.

tinent. He has been engaged upon some of the most important works of improvement and usefulness in this country, and his reputation is widely known, not only here, but also in Europe.

Among the most important public works upon which Mr. Jervis was employed as chief engineer, we enumerate the Delaware and Hudson Canal and Railroad; the Mohawk and Hudson Railroad; the Saratoga and Schenectady Railroad; the Chenango Canal, of New York; the Eastern division of the Erie Canal enlargement; the Croton Aqueduct; the Hudson River Railroad; the Michigan Southern and North Indiana Railroad; the Pittsburg and Chicago Railroad, and Consulting Engineer of the Boston Water Works.

Horatio Allen, Esq., is another eminent engineer of America, and the author is indebted to him for many of the facts to establish the authenticity of his history. Mr. Allen graduated at Columbia College, in the

State of New York, in 1823, and commenced his professional life in 1824, on the Chesapeake and Delaware Canal. In 1825 was engaged on the Delaware and Hudson Canal as resident engineer, under John B. Jervis. In 1827 resigned his position and visited England in search of professional information in railroad matters, that new era in intercommunication and transportation being then in process of development. During this visit, he was requested by John B. Jervis, Esq., to contract for the iron for the Delaware and Hudson Railroad, and for the first locomotive ever ordered and brought to America. On his return he took charge of the "Stourbridge Lion," the first locomotive ever put upon a railroad in America, and his hand opened the valve upon the engine that turned the first driving-wheel upon the American continent. Mr. Allen

HORATIO ALLEN.

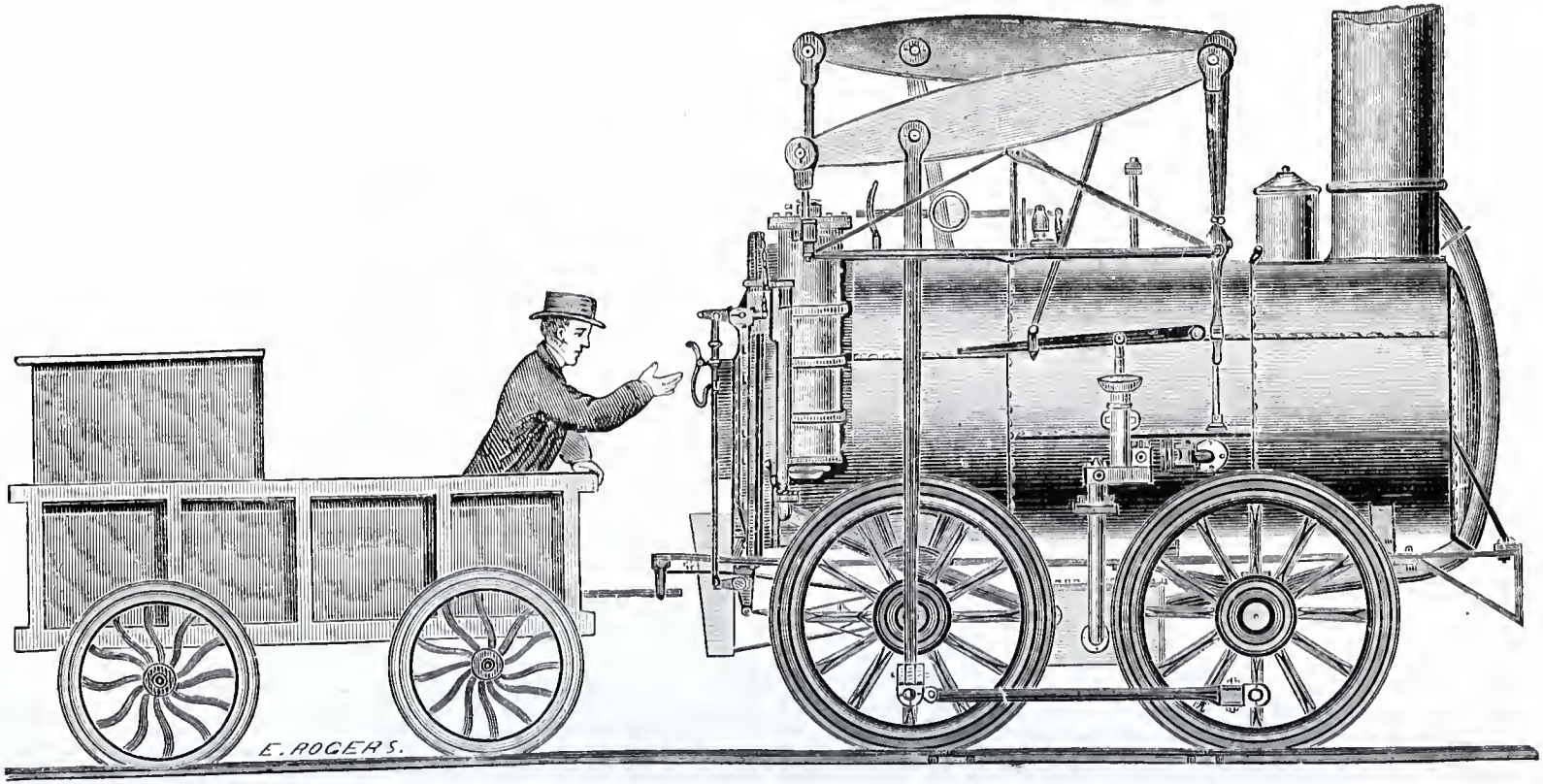
was also engaged as Chief Engineer of the South Carolina Railroad, extending from Charleston to Augusta, in Georgia, one hundred and thirty-six miles, and on this road was put the first one hundred miles of iron in one continuous line in the world. In 1834 Mr. Allen went abroad, and was in Egypt nearly three years. On returning, he was engaged as Principal Resident Engineer on the Croton Aqueduct, under John B. Jervis, and on its completion was one of the aqueduct commissioners and engineers for the introduction of the water. In 1842 he became one of the proprietors of the Novelty Iron Works, in New York, and was also its president. Prior to this he was President of the New York and Erie Railroad. In 1870 he was the Consulting Engineer of the East River Bridge, now in course of construction, and which, when completed, will be looked upon as a wonder of the age.

To Benj. H. Latrobe, Esq., of Baltimore, the author is largely indebted for the early history of the locomotive enterprise upon the Baltimore and Ohio Railroad, and for the drawing of the little experimental machine, built

by Mr. Peter Cooper, and used in the race with a horse-car, and the description of that interesting event. Mr. Latrobe has constantly been employed upon some public work in the engineering department, and upon the Baltimore and Ohio Railroad, from 1830 until 1857, and the last fifteen years as chief engineer. As chief engineer he located and built the railroad from Baltimore to Havre-de-Grace, as a part of the Philadelphia, Wilmington and Baltimore Railroad, in 1835–37, and the Northwestern Virginia Railroad, from Grafton to Parkersburg, one hundred and three miles, from 1853–57, and consulting engineer on special occasions to a number of railway works, the most important of which were the Hoosac Tunnel, Massachusetts; the Philadelphia, Wilmington and Baltimore Railroad (which office he now holds); the North Missouri Railroad; the Blue Ridge Railroad, in South Carolina; the East River Bridge; the Portland and Ogdensburg Railroad; the Hillsborough and Parkersburg Railroad, and the Columbus and Hocking Valley Railroad. We are also indebted for valuable information for our work to Mr. David Matthew, now living in San Francisco, California. Mr. Matthew, as we will show in the progress of this work, was the machinist who put together and fitted for the road, the first English locomotive that came to America. He also, as foreman of the works, superintended the machinists in the construction of the first, the second and the third locomotive built in America. The latter of these he accompanied personally to its place of destination, and became the regular engineer of the same. From that period—not quite half a century ago—he has been constantly engaged in some position of importance connected with the machinery department of a railroad, either in running a locomotive, or as superintendent of the motive power. In one of his letters to the author he narrated as a singular and interesting incident—that just forty years after, on the very same day of the month, the 9th of August, when he was the engineer on the "De Witt Clinton," he found himself standing upon a locomotive as the engineer crossing the Rocky Mountains, in front of a long train of passenger cars. Not such cars as we represent in our old picture with stage-coach bodies mounted upon railroad wheels, but splendid Pullman palace, sleeping and drawing-room cars, running at the rate of thirty, forty, or fifty miles an hour. How wonderful indeed must the change have seemed to the mind of this old veteran of the locomotive!

The author received a letter from Mr. Matthew, only a few months ago, in which he states that he is in his sixty-fifth year, and still actively engaged as a machinist.

In naming these distinguished engineers and machinists in the prominent positions they have been called upon to fill, the author is influenced



THE "STOURBRIDGE LION."

by a desire to show that his information upon that most important subject is derived from reliable sources, and though they are advanced in years, are yet alive to bear testimony to the accuracy of the same.

CHAPTER IV.

FIRST IRON RAILS AND ROADS.

MANY persons, otherwise well informed upon general topics, believe that the railroad was constructed especially for locomotives. They never dream that a locomotive is a modern invention, and that a railroad is an ancient institution. They never imagined that this peculiar kind of roadway was invented and in use several centuries ago, but, like the great auxiliary, the locomotive, was very defective and simple in its primitive state, and only since then has been subject to vast improvement. Various devices have been employed from the period when wheel carriages were first used for facilitating the movement over the ground in transportation. These devices, however, were mostly limited to the smoothing and levelling the surface of the way. The early Egyptians, in transporting the immense stones they used in the erection of the vast pyramids from the quarries, learned the advantage of hard, smooth, and solid trackways, and the remains of such are said to have been found on the line of the great road they constructed for this purpose. The ancient Romans also made some approach to the invention of railroads in the celebrated Appian Way. This was constructed of blocks of stone fitted closely together, and the surface presenting a smooth, hard track for the wheels. The first instance on record of rails being used on highways was as early as 1630, over two and a quarter centuries ago, and used for the transportation of coal from the mines near New Castle, in England. Old Roger North alludes to railways as being in use in the neighborhood of the River Tyne, in the year 1676, and he thus describes them: "The rails of timber were placed end to end, and exactly straight, and in two lines parallel to each other. On these, bulky carts were made to run on four rollers, fitting these rails, whereby transportation was made so easy that one horse would draw four or five chaldrons of coal at a load."

We read of railways in Scotland in 1745, at the time of the Scotch rebellion, that were laid down between the Tranent Coal Mines, near the harbor of Cockenzie, in East Lothian. The first iron rails that we find any written account of were used at Whitehaven. They were cast-iron mouldings, and were spiked down upon a wooden rail to receive the

weight and pressure of the wheel. In 1767 five or six tons of these rails were cast at Coalbrook Dale Ironworks in Shropshire. In 1776 the first iron rails we have any written account of were cast with a perpendicular ledge upon the outer side, in order to keep the wheels from running off the track, and after a while the ledge was changed to the inner side of the rail.

A railway of this kind was laid down at the Duke of Norfolk's colliery, near Sheffield. The road was torn up and destroyed by the laboring men of the colliery in a riot, and Mr. Curr, its builder and projector, had to save his life by flight, and concealed himself in a wood three days and nights to escape the fury of the excited rioters.

A great step in advance was made in 1789, by William Jessop, in the construction of a railway in Loughborough, with the first cast-iron edge rail with flanges upon the wheels. In 1801 Mr. Jessop made a rail that was laid down at the slate quarry of Lord Penrhyn. The tire of the wheel was hollowed out to fit the projecting curve of the edged rail, but as the fit soon became too tight by wear, it was afterwards changed to a flat surface and rim of the wheel, and a flange around each edge of it. So great was this improvement that it was found that ten horses would do the work that it had employed four hundred to do upon common roads.

In 1800 Benjamin Outram, of Little Eaton, in Derbyshire, introduced stone props, instead of timber, for supporting the ends or joinings of the rails. Taking the name from the projector, this kind of road was distinguished as the Outram road, and since, for brevity, tram-roads. Edge rails were soon after introduced in England. These rails were made thin at the base, and spread in thickness at the top, and continued in use until 1820, when the machinery was invented for rolling iron into suitable shapes for rails. This was a great improvement, for as cast-iron rails could only be made three or four feet long, requiring frequent joints, the material was more liable and subject to break, especially with heavy weights passing over it. Up to this time the motive power was the horse. Many projects and schemes were talked of and proposed for propelling the wagons. Sails were suggested, and various other means experimented upon, but speedily abandoned. Steam was the most favored, but how to apply it was to be found out.

CHAPTER V.

FIRST EXPERIMENTS IN STEAM CARRIAGES.

THE first actual model of a steam-carriage, of which we have any written account, was constructed by a Frenchman, named Cognot, who exhibited it before the Marquis de Saxe in 1763. He afterwards, in 1769, built an engine to run on common roads. The following is a description of it: Cognot's first carriage was put in motion by the impulsion of two single-acting cylinders, the piston of which acted alternately on the single front wheels. It travelled three or four miles an hour, and carried four persons, but from the smallness of the boiler it would not continue to work more than twelve or fifteen minutes without stopping to get up steam, and, though of rude construction, was a creditable piece of work, considering the time. He made a second engine, with which several successful trials were made in the streets of Paris, which excited much interest. An accident, however, put an end to his experiments. Turning the corner of the street, one day, near the Madeleine, when the machine was running at a speed of about three miles an hour, it upset with a crash, and, being considered dangerous, was locked up in the arsenal. Cognot's locomotive is still to be seen in the museum at Paris, and is a most interesting relic of early locomotion.

The first English model of a steam-carriage was made in 1784 by William Murdoch. This model was on the principle of the high pressure, and ran on three wheels (for common roads of course). It worked to admiration, but nothing further was ever done to bring the idea into a more practical form.

A few years after, Thomas Allen, of London, published the plan of a newly-invented machine for carrying goods without the use of horses, and by the use of steam. His plan was to have cogged wheels to run upon cogged rails, but nothing was ever brought about in this direction.

The first idea and proposition to introduce the railroad, imperfect as it then was, for transportation of goods and commercial purposes, as it now is, was made before the Literary and Philosophical Society, Newcastle, England, February 11, 1800, by Mr. Thomas, of Denton. His ideas were followed up by a Dr. Anderson, of Edinburgh, a friend and co-laborer of Watt in his experiments in steam-engines. Next came one Richard Trevithick, a foreman in a Cornish tin mine, who took out a patent for a machine or locomotive to travel on a common road, and was tolerably successful, but the roads about London were too rough and uneven, and the experiment was soon abandoned. Trevithick next turned his attention to the invention of a steam-carriage to run upon the tramroads, then

in general use in England, and in 1804 made a machine which was tried upon the Merthyr-Tydvil Railway, in South Wales, on which occasion it drew after it several wagons, containing ten tons of bar iron, at the rate of five miles an hour. This experiment may be considered as the first successful attempt to adapt the locomotive to service upon a railroad.

In 1811 a Mr. Blackensop, of Leeds, took out a patent for a machine and rail adapted to each other. A rack or toothed rail was to be laid down on one side of the road, into which a tooth-wheel of his locomotive worked. This engine commenced running on the railroad from the Middleton collieries to the town of Leeds, on August 12, 1812, and may be considered as the first instance of the employment of locomotive power for commercial purposes.

Another experiment was tried in 1812 to overcome the want of friction and keep the wheels from slipping upon the track, by a Mr. Chapman, of Newcastle. The plan was a chain stretched from one end of the road to another. The chain was passed once round a grooved barrel-wheel under the centre of the engine, so that, when the wheels turned, the locomotive would, as it were, drag itself along the railway. The experiment was tried on the Heaton Railway, near Newcastle, England, but it was so clumsy in its movements that it was soon abandoned.

But the most remarkable, extravagant, and amusing of all the experiments was the one adopted by a Mr. Brunton, of the Butterly Works, Derbyshire, in 1813, who took out a patent for a machine which was to go upon legs like a horse. This contrivance had two legs at the back which, being moved alternately by the engine, pushed it along. These legs or propellers imitated the legs of a man, or fore legs of a horse, and when worked by the machine alternately lifted and then pressed against the ground, propelling the machine forward, and in appearance resembled a mammoth grasshopper. It moved on a railway at the rate of two and a half miles an hour, but on one of its trials it unhappily blew up, killing and wounding several of the bystanders, and was never repaired, but laid aside as one of the failures of the times.

These experiments, though failures in their results, were followed up by a Mr. Blackett, of Wylan, whose persevering efforts paved the way for the future labors of George Stephenson. This last experiment of Mr. Blackett was a machine of the Trevithick patent, and was the most awkward machine imaginable. It had a fly-wheel working on one side to carry the cranks over the dead points. The boiler, of cast-iron, was on a wooden frame, supported by four pairs of wheels, and a barrel of water upon another frame on four wheels, the weight of the whole being about six tons. When all was ready on the day of trial the word was given to go ahead, but the engine would not move an inch; when it was finally

set in motion it flew to pieces, and the workmen and spectators, with Mr. Blackett at their head, scattered and fled in every direction. The machine, or what was left of it, was taken off the road, and afterward a portion of it was used as a pump at one of the mines. Mr. Blackett was not, however, discouraged. His next experiment was more successful than its predecessors, and though clumsy and unsightly, it was capable of drawing eight or nine wagons, loaded with coal, to the shipping point at Lemington. It crept along at a snail's pace, sometimes taking six hours to go five miles to the landing place. It was continually getting off the track, and there it would stick. Horses would then have to be sent out to pull it on the track, and at last it got so cranky that the horses were frequently sent out to follow the engine to be in readiness to draw it along, and it was finally abandoned.

When Mr. Blackett was experimenting with his locomotive, George Stephenson, then enjoying a high reputation for his ingenuity and skill as a machinist, was deliberating in his mind on the possibility of a locomotive being made and improved so as to eventually supersede the use of horse-power, but the want of means and difficulty of obtaining skilful mechanics at that early day to do the requisite work retarded him in his long-cherished idea of making a machine that would answer effectually that purpose. True it was that Blackensop's engine, built in 1813, had been in use upon the tramway at Wylan, and improvements were subsequently made, so that a machine had been constructed and run upon the tramway between Kenton and Cox Lodge, which was enabled to draw after it sixteen loaded cars, of about seventy tons, at three miles an hour. George Stephenson saw one of these at work, and when asked by one of his companions what he thought of it he replied that he "could make a better one than that;" and to accomplish this he devoted his whole mind and energies, the result of which, after many trials and experiments, was the construction of his locomotive "Rocket," which bore off the prize of £500, just before offered by the directors of the Liverpool and Manchester Railroad for a locomotive which should be produced by a certain day and perform a certain duty. The experiment was tried on October 6, 1827, and the competitors were "The Novelty," made by Messrs. Braithwait & Ericsson; "The Sans-pariel," made by Timothy Hockworth; "The Rocket," made by George Stephenson, and the "Perseverance," made by Mr. Burtsall. The trial was made upon a piece of road two miles in length, upon which the locomotives were to travel to and fro. The distance run by the "Rocket" was about twelve miles in fifty-three minutes. The other engines were not so successful, and the premium, after the trials on the 7th and 8th, was awarded to Mr. Stephenson's "Rocket."

Our narrative now brings us down to the period when locomotives were first introduced into the United States, in 1829. Two important railroads had been commenced and were in successful working order, as far as they had been built, but horse-power upon levels and stationary engines upon steep inclines were the only powers resorted to, locomotives not having yet been introduced. The experiments in England had been heard of in this country, and were frequently discussed by those interested in the success of railroads. The experiments of Mr. Stephenson had been carefully watched, and his name and fame as an eminent engineer were familiar to the minds of the people of this country. His success with the "Rocket" excited the liveliest interest here, and equally as much so as in England. His bearing off the £500 prize was hailed with rapture by thousands in America who admired him for his genius and indomitable perseverance.

We will now leave Mr. Stephenson and his improvements in England, and turn to the period of 1829 in the United States, when, although as before said, two important railroads and two coal roads were in successful progress, or in operation in different sections of this country, yet, as in England in its earliest day, for mining purposes only horse-power was used, and no attempt had been made to construct a locomotive, nor had one been imported from abroad.

CHAPTER VI.

FIRST LOCOMOTIVES AND RAILROADS IN AMERICA.

THE first railroad, or rather we would call it a tramroad, was built on the western slope of Beacon Hill, near Boston, by Silas Whitney, in the year 1807. It was used for transporting gravel from the top of the hill down to Charles street, which was being filled up and graded. There were two trains of cars so arranged that one train being loaded with gravel at the upper end would in its descent draw up the empty cars, while the cars were being filled, and in their descent would draw up the first train, thus doing the work without horses.

In 1810 another railroad or tramway was built in Ridley township, Pennsylvania, by Thomas Leiper, for transporting stone from his quarries on Crum Creek to the landing.

In 1825 a similar road was constructed at Nashua, New Hampshire, for carrying earth from a high hill called Indian Head to fill up grounds to build a factory upon.

In 1826 a railroad was built three miles long, extending from the granite quarries of Quincy, Massachusetts, to the Neponset river. This road was used for transporting the granite from the quarries to the point of shipment. The cars descended by gravity.

In January, 1827, a road was commenced, and completed in the same year, extending from the coal mines in Mauch Chunk, Pennsylvania, to the Lehigh river, a distance of nine miles. The descent, by a plane, was nine hundred and eighty-two feet, inclined, two hundred and twenty-five feet to the river, and thence twenty-five feet in a shute, and into the boats. The cars descended by gravity with the loaded wagons, and were, when emptied, drawn up again by mules.

In 1828 the Delaware and Hudson Canal Company constructed a railroad from their coal mines to Honesdale, where the canal commenced.

In this same year a road, six miles long, was projected by Gridley Bryant, to commence at the Quincy Granite Quarry, and extend to Milton Landing, to transport the granite of which Bunker Hill Monument is constructed. In transporting the pillars for the court house in Boston from this quarry at Quincy, the rough stones, each weighing sixty-four tons, were suspended beneath a platform supported upon four wheels, each six and a half feet in diameter. Oxen were used for drawing the loads.

Previous to 1830, Francis & E. M. Shields built a locomotive, which they called the "Western Star," for a Mr. Grover, of Lexington, Ky. In July of that year they constructed a new engine and car, which was exhibited in Cincinnati, and named after that city. The Cincinnati *Advertiser*, of July 31, 1830, stated, that "the movement of the machine on the railway is admirable, and we should suppose that the engine, with the car attached, carrying four persons, performed the distance of from eight to sixteen miles per hour." This locomotive and car was on exhibition at the Masonic Hall, in Philadelphia, September 1, 1830, and was thus mentioned in the Philadelphia *Gazette* of that date:

RAILROAD AND LOCOMOTIVE STEAM-ENGINE,
WITH CARS ATTACHED.

The ladies and gentlemen of Philadelphia and its vicinity are respectfully invited to call and view the above ingenious piece of mechanism, the operation of which no one can witness without being highly delighted and gratified. It will remain for a short time at the Masonic Temple, Chestnut street.

We next hear of this little experimental machine on exhibition in Rochester, N. Y., and the *Daily Advertiser*, of that city, thus describes its performance in a room: "We never expected to travel about by aid of steam—but so it is. This carriage is decidedly a steam-engine, which

needs no bridle nor spurs, and behaves better than any pony we ever drove. A nice little railroad turnpike runs round the room, on which the carriage travels, with a lady or gentleman as a passenger, going about the large room with as much ease as the 'Chancellor Livingston' steamer passes up Long Island Sound."

But the first experimental locomotive to test a principle, and tried upon a regular railroad, was that made by Mr. Peter Cooper, now of New York, and tried upon the Baltimore and Ohio Railroad, in the summer of 1830.

It has frequently been the fate of great inventions that men of high intelligence not only distrusted their practical application, but discouraged all experiments that might demonstrate success, or test their value.

In the year 1827, when a move was made to construct a railroad from Boston to Albany, Mr. Joseph T. Buckingham, a prominent and able editor, wrote in the Boston *Courier* as follows:

> Alcibiades, or some other great man of antiquity, it is said, cut off his dog's tail, that *quid nunc* might not become extinct for want of excitement. Some such motive, we doubt not, moved one or two of our natural and experimental philosophers to get up the project of a railroad from Boston to Albany—a project which every one knows, who knows the simplest rules in arithmetic, to be impracticable, but at an expense little less than the market value of the whole territory of Massachusetts, and which, if practicable, every person of common sense knows would be as useless as a railroad from Boston to the moon. Indeed, a road of some kind from here to the heart of that beautiful satellite of our dusky planet would be of some practical utility, especially, if a few of our national public-spirited men, our railway fanatics, could be persuaded to pay a visit to their proper country.

At the same time, when the propriety of building a railroad in Connecticut was agitated, a petition, numerously signed, was sent to the legislature of that State in opposition to the undertaking, wherein it was stated that the excitement on the subject of railroads has been much greater than any experience of their utility will warrant, as is common respecting new inventions, as it has been already found that they cannot be beneficially applied as extensively as the interested and exaggerated accounts of them have heretofore led the public to expect; that the difficulty and expense of constructing them, and of keeping them in repair, are much greater than has been represented, and finally, that the danger to life which arises from the extensive use of them, from their liability to get out of repair, is much more serious and alarming than has been supposed.

The "Best Friend," the First Locomotive built in the United States for actual service on a Railroad.

The "Best Friend" was built at the West Point Foundry Shops, in New York City, for the South Carolina Railroad, arrived in Charleston by ship Niagara, October 23d, and after several experimental trials, in November and December, 1830, made the first excursion trip, as above, on Saturday, 15th January, 1831, being the anniversary of the commencement of the road. (See extract from *Charleston Courier*.)

CHAPTER VII.

THE "STOURBRIDGE LION"—FIRST IMPORTED LOCOMOTIVE.

THE first locomotive that made a revolution of its driving wheel upon the American Continent was ordered by John B. Jervis, Esq., through Horatio Allen, who was at that time in England, and who was also instructed to contract for iron rails for the road. Mr. Allen made a contract accordingly with Foster, Rastrick & Co., at Stourbridge, England, a manufacturing town on the River Stour, about fifteen miles west of Birmingham.

This locomotive, which was called the "Stourbridge Lion," arrived in New York, May 17, 1829, by the ship "John Jay;" was landed at the wharf of the West Point Works, then at the foot of Beach street, North river, and was put together by Mr. David Matthew, who had charge of the hands engaged in that duty. It was then forwarded up the Hudson river, was at Rondout 4th of July, on its way to Honesdale by the canal, and arrived at its place of destination the latter part of July. It was placed upon the road by means of an inclined plane, built for that purpose, and some little experiments made with it to see that all was right.

On August 8, 1829, the first public demonstration of its power of moving was made at Honesdale, in the presence of thousands of spectators assembled to look at the curious-looking animal, as many of the country people called it.

Mr. David Matthew, in a letter to the publisher, gives a description of the "Stourbridge Lion" in these words: "The locomotive was a four-wheel engine, all drivers, with all four wheels connected by pins in the wheels. The boiler was a round, cylindrical one, with no drop part for the furnace, and the smoke box had a well-painted lion's head on it. The cylinders were vertical, placed at the back and each side of the furnace, with grasshopper beams, and connecting rods from them to the crank pins in the wheels."

Mr. Horatio Allen stood alone upon this engine at the first trial trip, and gives the following description of the great event:

It was on the banks of the Lackawaxen, at the commencement of the railroad connecting the canal of the Delaware and Hudson Company with their coal mines, and the circumstances which led to my being left alone on the engine were these: The road had been built in the summer, the structure was of hemlock timber, and the rails, of large dimensions, notched on to caps placed far apart. The timber had cracked and warped from its exposure to the sun. After about five hundred feet of straight line the road crossed the Lackawaxen creek, on a trestle-work about thirty feet high, and with a curve of three

hundred and fifty or four hundred feet radius. The impression was very general that the iron monster would either break down the road, or that it would leave the track at the curve and plunge into the creek. My reply to such apprehension was, that it was too late to consider the probability of such occurrence; that there was no other course but to have the trial made of the strange animal that had been brought here at such great expense, but that it was not necessary that more than one should be involved in its fate; that I would take the first ride alone, and that the time would come when I should look back to this incident with great interest. As I placed my hand on the throttle-valve handle I was undecided whether I would move slowly, or with a fair degree of speed; but believing that the road would prove safe, and preferring, if we did go down, to go down handsomely, and without any evidence of timidity, I started with considerable velocity, passed the curve over the creek safely, and was soon out of hearing of the cheers of the large assemblage present. At the end of two or three miles, I reversed the valves, and returned without accident to the place of starting, having thus made the first railroad trip by locomotive on the Western Hemisphere.

The reader will, no doubt, ask what became of the "Stourbridge Lion?" To this inquiry we will answer, that after several trials of the machine it was deemed too heavy for the road, which was made with numerous trestles and of very light materials, so, in November following its advent it was switched off the road, and a shed built over it to protect it from the weather, where it stood for many years, the terror of the little ones who had to pass that way to and from school, for fear of the fierce-looking lion. After a few years many of its parts were taken for other service. The cylinders were placed in the machine shop to drive some lathes, and the boiler taken to Carbondale, where it was used for many years, and only lately removed to give place to a much larger one. The old one was to have been seen standing by the side of the railroad at Carbondale.

The author has often been asked, when conversing with persons upon the subject of the early locomotives in America, what inducement first led him to inquire into the advent of the old English locomotive, the "Stourbridge Lion." This he would explain by saying that on one occasion when conversing with some railroad men and examining one of the copies of the original picture in the Connecticut Historical Society, and his connection with it, an old railroad man present remarked that in early days he had lived in Honesdale, Pennsylvania, and remembered well that a locomotive, said to be from England, and the first ever run in America, was tried upon the Delaware and Hudson Railroad, at Honesdale; that he remembers seeing Mr. Allen standing alone upon the machine on that memorable occasion, and noticed the deep anxiety manifested in the vast assemblage present as the machine approached the bridge crossing the Lackawaxen creek, heard the loud shouts of the multitude, and re-

membered the accident with the cannon. These remarks led to other communications, and that John B. Jervis, of Rome, was the engineer of the road at that time. This information was followed up by a personal visit to the veteran, Mr. Jervis, and to a most interesting conversation with him upon the subject, which resulted in a promise to look over some old papers for satisfactory records, he not wishing to rely upon memory alone for the facts. Meantime Mr. Jervis recommended an application to Horatio Allen, then living in Orange county, New York, which recommendation resulted in Mr. Allen's fixing the date to the summer of 1828, advising, at the same time, a reference to Mr. David Matthew, then living in Philadelphia. When this interview took place Mr. David Matthew stated that he was at the time the English locomotive arrived in New York the foreman of the West Point Foundry, where it was landed and put together; he stated, also, that Mr. Allen was too early in the date of the event, and that 1830 was the year of the occurrence. As there seemed two years' difference in the views upon this subject between two persons, both nearly identified with the arrival of the machine from England, the author deliberated upon some other plan to arrive at the date he desired. He then addressed a letter to Thomas Dickson, Esq., President of the Delaware and Hudson Canal and Railroad Company, desiring his assistance from some record in the office at Honesdale. In reply the president stated that he had directed the secretary to search the office records for some paper to fix the exact time of the trial, and in his next letter expressed his deep regret at not being able to comply with the request, as the secretary reported that he could find no papers dated beyond 1833; that if any papers existed prior to that date they were put away somewhere and could not then be found; that the superintendent, C. T. Young, Esq., had written to a friend at Montrose to examine a file of old newspapers for some mention of the experiment. Months then passed, when the author wrote to the postmaster of Montrose, making some inquiries about that file of old newspapers, and his object in so doing. His perseverance was rewarded by a letter from a lady, Miss Emily C. Blackman, informing him that the postmaster had shown her the letter of inquiry; that she felt interested upon the subject—thought it should not be in after years involved in doubt like who discovered America—whether Columbus or Americus—and offered her aid to search the columns of an old file of papers she had access to, but which would not be allowed to go out of the office; and further, if she was informed about what time to make a start, she would at once commence her research and devote a portion of time every day to that object until something was discovered to determine the date of the occurrence. As Mr. Allen had fixed the time in the summer of 1828, she was directed to start

her investigation from January 1, 1828. Miss Blackman's next letter informed the author of the result of her investigation, commencing "My dear sir, I have struck oil," and gives the following extract: "MELANCHOLY ACCIDENT.—A young man, named Alva Adams, had his arm fractured by the premature discharge of the cannon while firing the salute when the first locomotive turned a driving-wheel upon the American continent." From the *Dundaff Republican*, but no date. She further wrote that a Mr. Dilton Yarrington, of Carbondale, had a file of the *Dundaff Republican*, and advised the author to apply to him. Months passed on and no progress, when another plan was resorted to for obtaining the positive date of this first experiment with the English engine. As the extract from Miss Blackman mentioned an accident on the occasion from a cannon, the author addressed a letter to the postmaster of Honesdale, asking the name and address of the oldest physician in that place, and received for an answer that Doctor John Losey was the person desired. He was over eighty years of age, had not practised for twenty years past, was failing very fast, and could last but a short time. The doctor was addressed upon the subject, and proved to be the very person who took Alva Adams' arm off, the charge for the amputation being upon his books the 8th day of August, 1829. The doctor stated that he remembered well that the accident occurred about eleven o'clock in the day. Reaction took place, and the amputation was made about four o'clock the same afternoon. A few weeks after, the author received from Mr. Yarrington a file of the *Dundaff Republican*, and under date of August 13, 1829, is an account of the accident with the cannon, and other particulars of this first experiment of the English machine, which took place on Saturday, August 8, 1829, and thus we see that Mr. Allen was just one year too early, and Mr. David Matthew the same time too late in their idea of the actual time of the first experiment of the "Stourbridge Lion" on the American continent.

In a letter received from the author's correspondent (Miss Emily C. Blackman) a few weeks before the opening of the great Centennial Exhibition, he was informed that the boiler of the "Stourbridge Lion" had been removed from the company's foundry to make room for a larger one, and that the old veteran might now be seen standing upon trestles alongside the road near the workshops at Carbondale and offered for sale. The company asked one thousand dollars for it, having several times refused five hundred.

When the author learned these facts from Miss Blackman he addressed a letter to the superintendent of the Delaware and Hudson Railroad Company, advising the removal of this valuable relic to Philadelphia, to occupy an honorable position in the great Centennial Exhibition, where,

he well knew, it would be looked upon with a great deal of curiosity and interest, but nothing was done on the subject, and no doubt it is yet to be seen standing upon trestles by the side of the road; and, as Mr. Yarrington says in one of his letters, there it may remain until wasted away like an old cripple, and be eventually forgotten.

CHAPTER VIII.

PETER COOPER'S "TOM THUMB"—ITS FIRST TRIAL, AND RACE WITH A HORSE-CAR.

WE have mentioned in the early pages of this work several railroads, or rather, tram-roads, as existing in different parts of this country previous to 1827–8. But these were merely constructed by the companies or parties owning them for the purpose of transporting their own coal, lumber, or products to a market. The two first railroads chartered in America for commercial purposes, as at present throughout our wide-spread Union, were the Baltimore and Ohio Railroad and the South Carolina Railroad.

The corner-stone of the Baltimore and Ohio Railroad was laid on July 4th, 1828, attended by one of the most magnificent displays ever witnessed in that city. One of the most interesting features on that occasion was the presence of the venerable Charles Carroll, of Carrollton, the last survivor of the Signers of the Declaration of Independence. When the stone was brought forward to its destined position by the Masonic Fraternity, and its truth tested by the Grand Master's square, level, and compass, Mr. Carroll advanced, and, with a firm hand, removed the first shovel of earth, and the stone was lowered to its position amidst the roar of cannon and the shouts of thousands assembled to witness the interesting event.

In August, 1830, the first locomotive, to determine a principle, was placed upon this road by Mr. Peter Cooper, of New York. The first experiment was a most interesting event, and is fully illustrated by Ross Winans and H. B. Latrobe, Esqs., two of the participants on the memorable occasion; and the cause which led to it is fully explained in the following letter to the author from Mr. Peter Cooper himself, in reply to some inquiries upon the subject:

NEW YORK, *May 18th*, 1869.

MR. WM. H. BROWN:

MY DEAR SIR:—In reply to your kind favor of the 10th inst., I write to say that I am not sure that I have a drawing or sketch of the little locomotive placed by me on the Baltimore and Ohio Railroad in the summer of 1829, to the best of my recollection.

The engine was a very small and insignificant affair. It was made at a time when I

had become the owner of all the land now belonging to the Canton Company, the value of which, I believe, depended almost entirely upon the success of the Baltimore and Ohio Railroad.

At that time an opinion had become prevalent that the road was ruined for steam locomotives by reason of the short curves found necessary to get around the various points of rocks found in their course. Under these discouraging circumstances many of the principal stockholders were about abandoning the work, and were only prevented from forfeiting their stock by my persuading them that a locomotive could be so made as to pass successfully round the short curves then found in the road, which only extended thirteen miles, to Ellicott's Mills.

When I had completed the engine, I invited the directors to witness an experiment. Some thirty-six persons entered one of the passenger cars and four rode on the locomotive, which carried its own fuel and water; and made the first passage of thirteen miles, over an average ascending grade of eighteen feet to the mile, in one hour and twelve minutes. We made the return trip in fifty-seven minutes.

I regret my inability to make such a sketch of the engine as I would be willing to send you at this moment, without further time to do so.

Yours with great respect,

PETER COOPER.

Benjamin H. Latrobe, Esq., of Baltimore, in several letters to the author during his researches for information, gives the particulars of those early experiments of Mr. Peter Cooper upon the Baltimore and Ohio Railroad, to determine the much-disputed point—"The ability of a locomotive to run upon a curve." In one of Mr. Latrobe's letters he writes:—"I send upon the next page a copy of my sketch of Mr. Cooper's locomotive and of the horse-car. Mr. Winans tells me that Mr. Cooper brought the boiler from New York, and the fuel was anthracite coal. Mr. Winans, after examining my sketch, pronounces it substantially correct as to all the general features, and says that he remembers well, as he was one of the party with Mr. Cooper on the engine, its first experimental trip to Ellicott's Mills on August 28th, 1830."

H. B. Latrobe, Esq., counsellor of the Baltimore and Ohio Railroad, and brother of the Chief Engineer, in a letter to the author, gives a full description of the events and incidents of that memorable day, and from which we extract the following:

For a brief season it was believed that this curved feature of the Baltimore and Ohio Railroad would prevent the use of locomotives, if they ever got to be the power in use; but the contrary was demonstrated by a gentleman still living, Mr. Peter Cooper, of New York. Among the first buildings erected at Mount Clare was a large car-house, in which railroad tracks were laid at right angles with the road track, communicating with the latter by a turn-table. In this car shop Mr. Cooper had his engine, and here steam was first raised, and, in presence of Mr. George Brown, the treasurer of the company, his father, Mr. Alex. Brown, Mr. Philip E. Thomas, and the writer, Mr. Cooper, with his own hand, opened the throttle, admitted the steam into the cylinder, when the crank substitute operated successfully with a clacking noise, and the machine moved slowly forward, with some of the bystanders, who had stepped upon it. And this was the first locomotive ever built in America, and this was the first transportation of persons by steam that had ever taken place on this side of the Atlantic on an American locomotive.

Mr. Cooper's success was such as to induce him to try a trip to Ellicott's Mills, on

which occasion an open car, the first used upon the road, having been attached to the engine and filled with the directors and some friends, the first journey by steam in America on an American locomotive was commenced.

The trip was most interesting. The curves were passed without difficulty at a speed of fifteen miles an hour; the grades were ascended with comparative ease; the day was fine, the company in the highest spirits, and some excited gentlemen of the party pulled out memorandum-books, and when at the highest speed, which was eighteen miles an hour, wrote their names and some connected sentences, to prove that even at that great velocity it was possible to do so. The return trip from the Mills, a distance of thirteen miles, was made in fifty-seven minutes. This was in the summer of 1830. But the triumph of this Tom Thumb engine was not altogether without a drawback. The great stage proprietors of the day were Stockton and Stokes, and on that occasion a gallant horse, of great beauty and power, was driven by them from town, attached to another car on the second track—for the company had begun by making two tracks to the Mills—and met the engine at the Relay House, on its way back. From this point it was determined to have a race home, and the start being even, away went horse and engine, the snort of the one and the puff of the other keeping time and time.

At first the horse had the best of it; for his steam would be applied to the greatest advantage on the instant, while the engine had to wait until the rotation of the wheels set the blower to work. The horse was perhaps a quarter of a mile ahead, when the safety-valve of the engine lifted, and the thin blue vapor issuing from it showed an excess of steam. The blower whistled, the steam blew off in vapory clouds, the pace increased, the passengers shouted, the engine gained on the horse, soon it lapped him; the silk was plied, the race was neck and neck, nose and nose. Then the engine passed the horse, and a great hurrah hailed the victory. But it was not repeated; for just at this time, when the gray's master was about giving up, the band which drove the pulley, which moved the blower, slipped from the drum, the safety-valve ceased to scream, and the engine, for want of breath, began to wheeze and pant. In vain Mr. Cooper, who was his own engineer and fireman, lacerated his hands in attempting to replace the band upon the wheel; in vain he tried to urge the fire with light wood. The horse gained on the machine and passed it; and although the band was presently replaced, and steam again did its best, the horse was too far ahead to be overtaken, and came in the winner of the race. But the real victory was with Mr. Cooper, notwithstanding. He had held fast to the faith that was in him, and had demonstrated its truth beyond peradventure. All honor to his name. In a patent case, tried many years afterwards, the boiler of Mr. Cooper's engine became, in some connection which has been forgotten, important as a piece of evidence. It was hunted for, and found among some old rubbish at Mount Clare. It was difficult to imagine that it had ever generated steam enough to drive a coffee-mill, much less that it had performed the feats here narrated. In the museum at Paris there are preserved old cannon, contemporary, almost, with Crecy and Poictiers. In some great museum of internal improvement—and some such will at a future day be gotten up—Mr. Peter Cooper's boiler should hold an equally prominent and far more honored place; for, while the old weapons of destruction were ministers of man's wrath, the contrivance we have described was one of the most potential instruments in making available, in America, that vast system which unites remote people and promotes that peace on earth and good-will to men which angels have proclaimed.

CHAPTER IX.

THE "BEST FRIEND"—THE FIRST LOCOMOTIVE BUILT IN AMERICA.

WHILE these events were transpiring in Maryland, by the progress of the Baltimore and Ohio Railroad, a similar enterprise, nearly equal in its magnitude and fully so in importance, had agitated the minds of the people in another section of the country. The practicability of establishing a railroad communication between the city of Charleston, South Carolina, and Hamburg, on the western border of the State, a distance of one hundred and thirty-six miles, must have been talked of, and even some primary steps taken for its consummation, as early as 1827, for we saw in an old file of the *Charleston Courier* of December, 1827, a letter from the committee of the Legislature, to whom the subject for the surveys for this road was referred. The first charter was granted December 19, 1827.

Several meetings were called in Charleston—the first, January 4, 1827, and the next, January 7, 1828. On the reassembling of the Legislature, January 21, 1828, a new bill was reported, and on January 29, 1828, the present charter of the South Carolina Railroad was granted.

The stockholders organized as a company on the 11th and 12th of May, 1828, being the second railway company formed in the United States for commercial purposes and the transportation of passengers and freight.

Horatio Allen, Esq., the same individual who stood alone upon the "Stourbridge Lion" on its first trial trip, was engaged as the chief engineer for the South Carolina Railroad, and, at the request of some of the principal projectors at the first meeting, five days only after the charter was obtained, made a report recommending for what kind of power the road should be built.

In this report Mr. Allen used all the arguments in his possession in favor of locomotive power. He made the comparative estimates of the results of horse-power and locomotive power, and rested the decision of the question on this position: That the horse had already done all that a horse could ever do, but the man was not living who could say what this new element, the locomotive, would ultimately come to, and this prediction has been most signally verified.

At this same first meeting the resolution was offered by the Hon. Thomas Bennett "That the South Carolina Railroad should be built expressly for locomotive power." This principle or power, he stated, was (in its application to railroads) fast maturing, and would certainly reach, within the period of constructing their road, a degree of excellence that would render the use of animal power a great abuse of the gifts of genius and science. This resolution was passed unanimously.

JULIUS D. PETSCH.

N. W. DARRELL.

As soon as the above resolution was passed E. L. Miller, Esq., of Charleston, proposed to the directors that he would furnish the company with a locomotive, built in America, that should beat the "Rocket," built by Stephenson in England, and that it should run ten miles an hour, and draw after it three times its own weight.

On March 1, 1830, the committee reported that a contract had been entered into with Mr. E. L. Miller, of Charleston, to construct for the South Carolina Railroad a locomotive; that it was to run ten miles an hour, and carry or draw three times its own weight. Mr. Miller's locomotive was built at the West Point Foundry Shops, at that time foot of Beach street, New York city. Mr. David Matthews, foreman of the shop, the same machinist who put together the first English locomotive, the "Stourbridge Lion," superintended the hands constructing this locomotive, and when finished it was forwarded to Charleston by ship Niagara, and arrived October 23, 1830. As no machinist came out with the locomotive, the superintendent of the road applied to Mr. Thomas Dotterer, of the firm of Dotterer & Eason, machinists and engineers, to put the locomotive together and prepare it for the road. Mr. Julius D. Petsch, who was foreman of these shops, undertook the task, and selected as an assistant Mr. Nicholas W. Darrell, a young man just out of his time. These gentlemen immediately set about fitting up the "Best Friend"—as Mr. Miller named the machine—and in a few days all was ready. Before November 1, 1830, several experimental trials, at short distances, were made, and on November 2, with young Darrell in charge, Mr. Miller, accompanied by several gentlemen in a car, made a trial trip. In the *Charleston Courier* of December 29, 1830, we find the following amusing and interesting account:

Sporting Intelligence.—Our distant friends, no doubt, are desirous to know the result of our Christmas sports. The celebration season was altogether novel and interesting. The iron horse, 'Best Friend,' was entered for the purse, about a fortnight since, to 'run against time.' The 'heat' was that he should run ten miles an hour, carrying three times his own weight. He was trained every day preparatory to the great trial of speed. Doubts were at first entertained as to 'his wind,' when everybody acknowledged he had sufficient 'bottom.' The 'Best Friend' is out of a horse bred by Messrs. Watt and Bolten, and of the same breed as the 'Novelty' and 'Rocket,' which contended for the purse of £500 at the late Liverpool and Manchester races. By crossing the breed with a Columbian sire he has 'eclipsed' his progenitors upon the European, and stands unrivalled upon the American turf. The knowing ones have already hinted that his dam was 'half salamander, half alligator,' as he eats fire, breathes steam, and feeds upon light wood. All doubts, however, of his being 'short-winded' have been dissipated, and it is now confidently believed that he can run one hundred miles without 'flagging,' for, like Pat, after the foot-race at Donnybrook fair, when being questioned if he was 'out of breath,' he replied, 'No, faith, I'm only likely to be troubled with too much of it.' But, Mr. Editor, allegory apart, I am the 'odd fellow' of the one hundred and forty-one persons who were drawn or rather whisked through the air by the iron horse or locomotive on Christmas Day. We flew on

the wings of the wind at the varied speed of fifteen to twenty-five miles an hour, annihilating 'time and space,' and, like the renowned John Gilpin, 'leaving all the world behind.' A venerable friend of mine, seventy-five years of age, gravely remarked he thought it was passing through life rather too quick, as the journey, at least, was a very short one. 'Very true, my good sir,' said I. 'We cannot, however, just now take time for those sage reflections on matters and things in general so necessary to our mental and moral improvement.' It was nineteen minutes, five and one-fourth seconds since we started, and we discovered ourselves beyond the forks of the State and Dorchester roads. Somebody exclaimed the engine was 'waltzing.' I looked around, and 'tis a fact, Mr. Editor, notwithstanding the apparent absence of every moving principle of grace or agility, it turned round as nimbly as a miss of sixteen; but I swear by the spectacles I shall one day or other wear that either the road or the engine turned round like a top—in proof of which I appeal to my own pumps if it did not afterward *chassé* to the left and remain there until the three cars led off a country dance before it. Never did reviewing general present a more warlike front to troops passing on line of march than did this same knight-errant, 'clad in his iron-bound armor.' As each car came in front it gave us three whiffs of steam, in acknowledgment that the compliment to our company was felt and appreciated. Never were the three ruffles of the drum more gratifying to my feelings when military ardor 'fired my breast.' On our return it again headed the column. We came to Sans-Souci in quick and double-quick time, darting forth like a live rocket, scattering sparks and flames on either side; passed over three salt water creeks, hop, skip and jump, and landed us all safe at the lines before any of us had time to determine whether or not it was prudent to be scared. It beats the dumb chess player all hollow.

Your obedient servant,
JOCKEY OF YORK.

The *Charleston Courier*, of January 17, 1831, contains another interesting article describing the excursion trip with the "Best Friend" on Saturday, January 15, 1831, the first anniversary of the commencement of the road. On this occasion Major Belton furnished a cannon and a detachment of United States troops to fire the salute as the train passed different important points, and at two o'clock a Federal salute was fired by a detachment of troops stationed upon the remains of the old fortification erected during the Revolution, near the Quarter House. A band of music enlivened the scene, and great hilarity and good humor pervaded throughout the day.

So much at present for the "Best Friend," the first locomotive in America built for actual service on a railroad. The "Best Friend," all the time in the charge of young Darrell, continued to do the work of the road, and gave such satisfaction to the board of managers that they directed Mr. Allen to order a second machine, which he did, from the West Point Foundry, with such changes and modifications as he desired. Meantime the "Best Friend" was daily in service transporting workmen, ballast, lumber and all materials used in the construction of the road until June 17, 1831, when an accident put a stop to it for a time, and the road was without a locomotive for several months. As this is the first accident of the kind, we will give the account as we copied it from the *Charleston Courier*, June 18, 1831:

The locomotive, 'Best Friend,' started yesterday morning to meet the lumber cars at the forks of the road, and while turning on the revolving platform the steam was suffered to accumulate by the negligence of the fireman, a negro, who, pressing on the safety-valve,

prevented the surplus steam from escaping, by which means the boiler burst at the bottom, was forced inward, and injured Mr. Darrell, the engineer, and two negroes. The one had his thigh broken, and the other received a severe cut in the face and a slight one in the flesh part of the breast. Mr. Darrell was scalded from the shoulder-blade down his back. The boiler was thrown to the distance of twenty-five feet. None of the persons were dangerously injured except the negro, who had his thigh broken. The accident occurred in consequence of the negro holding down the safety-valve, while Mr. Darrell, the engineer, was assisting to arrange the lumber cars, and thereby not permitting the necessary escape of steam above the pressure the engine was allowed to carry.

The wreck of the "Best Friend" was taken by Mr. Julius D. Petsch for repairs and such alterations as were found, upon experiment, to be necessary.

Railroad men of the present day will, no doubt, ask, "Why was the engineer, Mr. Darrell, not at his post upon the engine, and why was he attending to the arrangement of the lumber cars, leaving the engine in charge of his negro fireman?" To these questions we will reply by stating that at that early day in railroad experience no such officers of a train as conductors, flagmen or brakemen had been thought of. The engineer of a locomotive, like the drivers of the old-fashioned stage-coaches in bygone days, and of the horse cars used upon railroads, had to do their own "hitching up." Hence the reason why Mr. Darrell was not on the engine. At that time everything had to be learned as necessity demanded it.

CHAPTER X.

THE "WEST POINT"—THE SECOND LOCOMOTIVE BUILT IN AMERICA, AND ALSO RUN UPON THE SOUTH CAROLINA RAILROAD.

AS we stated in the previous chapter, the directors of the South Carolina Railroad ordered another locomotive to be built. This locomotive was finished under the supervision of Mr. David Matthew, foreman of the West Point Works, forwarded to Charleston by the ship Lafayette, and arrived February 28, 1831 Mr. Matthew, in a letter to the author, thus describes this second locomotive:—"It had the same size of engine, frame, wheels, and cranks as the 'Best Friend,' but had a horizontal tubular boiler. The tubes were two and a half inches in diameter and about six feet long." After the machine arrived in Charleston, and was put together, some experimental trials were made to see that all was right. A public demonstration of its power was made, which is thus described in the *Charleston Courier* of March 12, 1831:

On Saturday afternoon, March 5th, 1831, the locomotive "West Point," under the charge of Stephen Lee Alison, underwent a trial of speed, with the barrier car and four cars for passengers, on our railroad. There were one hundred and seventeen passengers, of which number fifty were ladies, in the four cars, with six bales of cotton on the barrier car; and the trip to the Five Mile House, two and three-fourths miles, was completed in eleven minutes, when the cars were stopped, to oil the axles, about two minutes. The two and one-fourth miles to the forks of Dorchester road were completed in eight minutes. The safety has been ensured by the introduction of the barrier car and the improvements in the formation of the flange of the wheels, which, we learn, was made by a young mechanic of the city, Mr. Julius D. Petsch, in the company's service. The new locomotive worked admirably, and the safety-valve, being out of the reach of any person but the engineer, will contribute to the prevention of accidents in future, such as befell the "Best Friend."

This barrier car referred to in the description of the trial trip in the extract from the *Courier*, and presented in our sketch of the "West Point" and train, was a car surmounted with six square bales of cotton, strapped upon it by means of hoop-iron, and was run with every passenger train, placed between the locomotive and passenger cars, as a means of protection from steam or hot water should an accident occur, as with the "Best Friend;" and so confident were the community in the complete efficacy of this protection that passengers, after procuring their tickets, would examine the make-up of the train to see that the barrier car was in its proper position, before taking their seats in the cars for the journey.

Following the barrier car on this train came an open car, upon which was seated the well-known colored band of Charleston, who discoursed most excellent music in their performance of national airs, which added much to the hilarity and pleasure of the occasion.

The "West Point" continued to do the work upon the road alone until the "Best Friend" was rebuilt by Mr. Julius D. Petsch, and came out again upon the road, under the new name of the "Phœnix." After being run a few days by Mr. Eason, she was put in charge of a young apprentice by the name of Henry G. Raworth, who served as engineer until the machine was worn out and taken off the road. Mr. Raworth has continued to run as a locomotive engineer ever since upon the South Carolina Railroad, a consecutive service of forty-five years. For the last twenty-one years of this time Mr. Raworth has had with him, as fireman, a negro man named Adam Perry, and they are together now running a locomotive on the South Carolina Railroad, and are the oldest locomotive engineer and fireman on a railroad in the United States. In support of the above we quote a letter from Mr. Raworth of recent date:

AIKEN, *February 24th*, 1876.

WM. H. BROWN, ESQ.:

DEAR SIR:—Yours duly to hand dated the 20th inst. In reply to your note (not that I have any ambition of saying I am the oldest locomotive runner) I will state facts. The

first practical engine was the "Best Friend" engine. When she was blown up Mr. Darrell was engineer. She was then rebuilt by Mr. Julius D. Petsch, with outside connections. Mr. John Eason then run her, and her name was changed to the "Phœnix." After Mr. Eason I took charge of the run. Mr. Darrell and Mr. Eason are both dead, but, thank Providence, I am still alive and in good health, running a locomotive on Aiken Hill yet. I am now sixty-four years old. All my faculties are good, except I cannot jump and skip about like a young man. I attribute my good health to temperance in my younger days. Hoping these few lines are satisfactory, and may find you well, I remain

Yours truly,

H. G. Raworth,

Engineer on Aiken Hill yet.

P. S.—My old negro fireman, Adam Perry, is still with me and well.

In this chapter we will give a letter from James E. Eason, showing that at Charleston an engine was built about the same time that the "West Point" was put on the road. The following is a letter to the author, which will explain itself:

Office of J. M. Eason & Brother, Manufacturers of Steam-Engines, Boilers, and Machinery,
Charleston, S. C., *September* 24, 1869.

William H. Brown, Esq.:

Dear Sir:—I enclose you a note from old Mr. Darrell, and also a photograph of him, which I prevailed upon him to have taken for you.

If of any interest to you, I could send you a photograph of Thomas Dotterer, who, in early railroad days, built the "Native," the first locomotive ever built with outside connections and straight axles. After the explosion of the "Best Friend," Mr. Petsch took the wreck to Mr. Dotterer's shop to rebuild, as the railroad company had at that time no shop. In repairing the "Best Friend," Mr. Petsch changed the double-crank axle to a straight axle, made cast-iron wheels, changed the position of the cylinders, and made the first outside connection, so universal at the present day, and was then appointed master-machinist of the road.

I remember the first trip of the "Native." She had been started out to run up the road, and I well remember the great prejudice which Mr. Dotterer had to encounter against his plan of outside connections, which was then urged to this effect: that the power, being applied to the end of the axle, would rack the road to pieces and the engine too; that the *thing* (not calling it an engine) would not do, etc. But, nothing daunted, he made the engine and sent it out. Evening came, and the locomotive—probably the second ever run on the road, certainty the first after the "West Point"—did not arrive with the train. Great uneasiness was manifested by the officers of the company; for in those days everybody interested attended at the arrival of a locomotive. Finally night came on; neither the regular train nor the little "Native" (for she only weighed about four tons) was in sight, and the murmurings could be heard in knots of persons and officials that the *thing* had broken the road, or blown up, or some other casualty had happened to her, and prevented the arrival of the other locomotive and train.

Now, my dear sir, imagine Mr. Dotterer's feelings; but behold him, the man of genius, standing amid the bickerings of men, almost fearing that his little engine was the cause of the delay, when a voice cried out, "She's coming!" and the sparks from the smoke-pipe were observed (for in those days spark-arresters were not perfected). Then a general rush to hear the news, to see what caused the detention, and learn the fate of the poor home-made "Native;" when, lo! a cry from a faithful friend of Mr. Dotterer, "Why, 'tis the 'Native' pulling locomotive and train!" Then look at Thomas Dotterer, with a

heart full, with tear-drops in his eyes, as the smile of successful championship and confidence in his work played upon his countenance. I stood beside him at that moment, and shared with him in his pride. If I had the time and the ability, I could gather many interesting facts of early railroad times here in our old city; for I can remember many things. But I only intend to enclose to you Mr. Darrell's letter and his photograph, and trust you will excuse me for thus intruding on your valuable time.

Very respectfully yours, etc.,

JAMES M. EASON.

CHAPTER XI.

THE "DE WITT CLINTON"—THE THIRD LOCOMOTIVE BUILT IN AMERICA.

THE accompanying sketch of a locomotive and train of cars (executed in that characteristic style of fixing resemblances in outline, and invented, according to the elder Disraeli, in 1757, in Paris, and called by the French *silhouettes*,) purporting to be a true copy from an original picture in the Connecticut Historical Society at Hartford, has been widely circulated all over the country, and sometimes represented as the "John Bull," an English locomotive, the first imported into the United States, and John Hampson, an Englishman, as the engineer. Latterly the same picture has been represented as the "De Witt Clinton," the first locomotive run in America, and John Hampson the engineer. In a former page of this history we make allusion to this picture as one of the causes which induced the author to compile this work, to correct the errors the whole community have been led into with regard to the true history of this sketch. And we will now relate the circumstances which led to it. In July and August, 1831, the author was in Albany in the exercise of his profession as an artist. He had the faculty of cutting out of black paper with great accuracy the resemblance of all objects and individuals, and enjoyed the most liberal patronage of the citizens wherever he chanced to make a sojourn professionally. His rooms were the centre of attraction, and his cuts were in demand from all classes in the community. On the 9th day of August, 1831, some one entered his room and inquired if he was going to see the locomotive to be run upon the road that day. Instantly he closed his office and hastened to the top of the inclined plane, and on arriving at the spot where the road commenced, he encountered a vast crowd assembled to witness the first experiment with a locomotive upon the Hudson and Mohawk Railroad, extending then from Albany to Schenectady. The locomotive and whole make-up of the train at once attracted his attention, and he determined to make a

sketch of the strange-looking machine and its accompaniments. Not anticipating a sketch to be made when he left the office the author was unprepared for the task, but drawing from his pocket a letter he had received that day, with a few lines only written on a sheet of cap paper, and substituting his hat for a desk, he made a rough sketch of the locomotive, the engineer, David Matthew, and the first of the passenger cars composing the train, when the word was given, "All aboard," and he hastened to a seat in the cars and took his first ride after a locomotive.

We will not attempt a description of this ride, but will leave it to our old friend, Judge Gillis, who was one of the passengers on that memorable occasion, and who thus describes the adventure:

RIDGWAY, PA., *June* 24, 1870.

MR. WM. H. BROWN:

DEAR SIR:—Your note of the 21st inst., asking for my recollections of such incidents as impressed themselves on my mind in the ever-memorable first trip by locomotive power from Albany to Schenectady, in 1831, is before me. In the early part of the month of August of that year, I left Philadelphia for Canandaigua, New York, travelling by stages and steamboats by way of New York to Albany, stopping at the latter place with my friend, J. M. Hughes, now of Cleveland, Ohio. I learned that a locomotive had arrived there, and that it would make its first trip over the road to Schenectady the next day. I concluded to lie over and gratify my curiosity with a first ride after a locomotive.

That locomotive, the train of cars, together with the incidents of the day, made a very vivid impression on my mind. I can now look back from one of Pullman's palace cars, over a period of forty years, and see that train, together with all the improvements that have been made in railroad travel since that time, for I have been a constant traveller for over half a century, and have observed the steady and constant progression in motive power and railroad facilities up to the present time. And now, taking 1870 as a standpoint, looking back and forward forty years, who can say that the next forty years will not exceed the past in railroad intercommunication, and that Dr. Krumer's theory of using compressed air as a motive power may not, ere that, be brought into general use, and that the engineer will manage his whole train with the same facility and ease that the Mexican caballero starts, runs and stops his horse?

I am not machinist enough to give a description of the locomotive that drew us over the road that day, but recollect distinctly the general make-up of the train. The sketch you showed me when I was last at your place, taken by you in your peculiar style, is very correct, and brings to my mind, as vividly as though only seen yesterday, the engine and train as it appeared on that never-to-be-forgotten occasion. The train was composed of coach bodies, mostly from Thorpe & Sprague's stage-coaches, placed upon trucks. The trucks were coupled together with chains or chain-links, leaving from two to three feet slack, and when the locomotive started it took up the slack by jerks, with sufficient force to jerk the passengers, who sat on seats, across the top of the coaches, out from under their hats, and in stopping they came together with such force as to send them flying from their seats.

They used dry pitch-pine for fuel, and, there being no smoke or spark-catcher to the chimney or smoke-stack, a volume of black smoke, strongly impregnated with sparks, coals and cinders, came pouring back the whole length of the train. Each of the tossed passengers who had an umbrella raised it as a protection against the smoke and fire. They were found to be but a momentary protection, for I think in the first mile the last one

went overboard, all having their covers burnt off from the frames, when a general melee took place among the deck passengers, each whipping his neighbor to put out the fire. They presented a very motley appearance on arriving at the first station. There rails were procured and lashed between the trucks, taking the slack out of the coupling chains, thereby affording us a more steady run to the top of the inclined plane at Schenectady.

The incidents off the train were quite as striking as those on the train. A general notice having been given of the contemplated trip, excited not only the curiosity of those living along the line of the road, but those living remote from it, causing a large collection of people at all the intersecting roads along the line of the route. Everybody, together with his wife and all his children, came from a distance with all kinds of conveyances, being as ignorant of what was coming as their horses, drove up to the road as near as they could get, only looking for the best position to get a view of the train. As it approached the horses took fright and wheeled, upsetting buggies, carriages and wagons, and leaving for parts unknown to the passenger, if not to their owners, and it is not now positively known if some of them have yet stopped. Such is a hasty sketch of my recollection of my first ride after a locomotive.

Hoping that your contemplated history of early locomotives in America may be appreciated by the reading public and a pecuniary success to yourself,

I remain, truly yours,
J. L. Gillis.

The writer of the foregoing letter, Judge Gillis, is a native of the State of New York, and is now eighty-three years of age. He served in the war of 1812, and was wounded at the battle of Lundy's Lane; moved to Pennsylvania in 1822; served his district in the House and Senate of the State and in Congress; was appointed Judge of the Court of Jefferson county in 1843; reappointed in 1844 as one of the first judges of Elk county. In 1862 he removed to Mount Pleasant, Iowa, where he now resides.

The author will now give his experience of the incidents on that memorable first ride; but how shall he attempt to describe it? The first movements were not in that quiet, imperceptible motion which characterizes the first impulsive action of the passenger locomotives of the present day. First came a sudden jerk, which bounded many of the passengers from their seats, to the great detriment of their high-top, fashionable beavers from their close proximity to the roofs of the cars. This first jerk being over, the engine proceeded on its route with considerable velocity for those times, when compared with stage-coaches, until it arrived at a water station, when it suddenly brought up with jerk No. 2, to the further amusement of some of the excursionists. At this water station a short stop was made, and a successful experiment tried to remedy these unpleasant jerks. A plan was soon hit upon and put into execution. The three links in the couplings of the cars were stretched to their utmost tension, and a rail from a fence near the road was placed between each car, and made fast by means of the packing yarn for the cylinders, a bountiful supply being on hand. This arrangement improved the

The "West Point," the Second Locomotive built in the United States for actual service on a Railroad.

The "West Point" was built at the West Point Foundry Works, in New York City, for the South Carolina Railroad, forwarded to Charleston by ship Lafayette, and after several experimental trials, in February, 1831, made the first excursion trip, as above, on Saturday afternoon, March 5, 1831. (See extract from *Charleston Courier*.)

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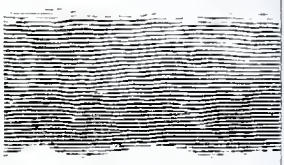
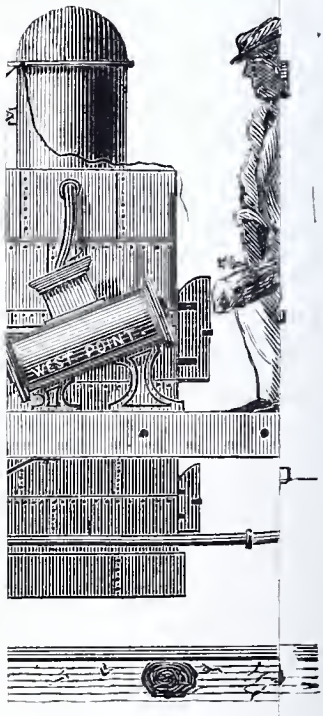




nt Foundry Work

order of things, and was found to answer the purpose when the signal was given and the engine started.

In a short time the train (after frightening the horses attached to all sorts of vehicles filled with the people from the surrounding country, or congregated all along at every available position near the road to get a view of the singular-looking machine and its long train of cars; after causing thus innumerable capsizes and smash-ups of the vehicles and the tumbling of the spectators in every direction to the right and left) arrived at the head of the inclined plane at Schenectady, amid the cheers and welcomes of thousands assembled to witness the arrival of the iron horse and its living freight.

After a short time passed in the ancient city of Schenectady, and some refreshments, the word was given by conductor Clark to prepare for the return. The excursionists resumed their seats, and in due time, without any accident or delay, the train arrived at the point from which it had first started—the head of the inclined plane at Albany. The passengers were pleased with the adventures of the day, and no rueful countenances were to be seen excepting, occasionally, when one encountered, in his walks through the city, a former driver of the horse-cars, who saw that the grave had that day been dug, and the end of horse-power was at hand for railroad transportation.

On the return to Albany from that first ride to Schenectady the author made a clean cutting in black paper of the locomotive "De Witt Clinton," Mr. David Matthew, the engineer, the tender attached, and the first two of her six passenger cars, with the likenesses of the old citizens of Albany as they appear as passengers. This picture was an object of great curiosity to the crowds who visited the author's room during his sojourn in that city.

The author's next visit, in a professional way, was to Hartford, Connecticut. This original sketch of the locomotive and train formed a great feature of attraction, and elicited many curious remarks from the visitors, who had never yet seen a locomotive and train.

After stopping several months in Hartford, where he was most liberally patronized by her citizens, he presented this picture to the Connecticut Historical Society, where it is yet to be seen, and is carefully preserved. On a recent visit to Hartford, he saw in the society rooms the same old picture, which carried his mind back to the incidents of his memorable ride after the "De Witt Clinton," the first locomotive in the State of New York.

We will here give an extract of a letter from David Matthew, the engineer, in reference to the construction of this locomotive:

American engine No. 3 was called the "De Witt Clinton." It was contracted for by John B. Jervis, Esq., at the West Point Foundry, and was commenced by me to fit up in April, 1831, soon after the engines "Best Friend" and "West Point" were completed and forwarded to Charleston.

I left New York with the "De Witt Clinton" on June 25, 1831, and had steam on to commence running in one week from that time. The "De Witt" had two cylinders, five and a half inches in diameter and sixteen inches stroke; four wheels, all drivers, four and a half feet in diameter, with all the spokes turned and finished. The spokes were wrought-iron, hubs cast-iron, and the wheels tired with wrought-iron, inside crank and outside connecting-rods to connect all four wheels; a tubular boiler, with drop-furnace, two fire-doors, one above the other; copper tubes two and a half inches in diameter and about six feet long; cylinders on an incline, and the pumps worked vertically by bell-crank. This engine weighed about three and a half tons without water, and would run thirty miles an hour with three or five cars, on a level, with anthracite coal, and was the first engine run in the State of New York on a railroad.

The following extracts from the *Albany Argus* [1831] will clearly show that the "West Point" Foundry engine was the first to run upon the Mohawk and Hudson Railroad, and that no English locomotive was in existence upon that road until the "Robert Fulton," built by Stephenson, arrived about the last of August, and was put on the road the 16th or 17th of September after:

Mohawk and Hudson Railroad.—We travelled over part of this road on Saturday, which is ready to receive the cars on Monday next, August 1, if not earlier. The road will be open from the head of Lydius street to the brow of the hill at Schenectady, a distance of about twelve miles and a half, and travelling upon it will be forthwith commenced. We learn that the company have decided on using steam power alone. The company will begin their operations with an engine from the West Point Foundry, which, we understand, will be placed on the road for service on Wednesday, the 27th, being precisely twelve months from the day the ceremony of breaking ground was performed last year. In less than a month the company expect from England one of Mr. Stephenson's engines, similar to those now in use on the Liverpool and Manchester Railway.

On Saturday this work was completed and prepared for the passage of the cars. On that day an experiment was made with the locomotive "De Witt Clinton" from the West Point Foundry; but, owing to some defect in the ignition of the Lackawanna coal, the speed did not at any time exceed six or seven miles an hour. On Saturday next, if the weather is favorable, the company propose to celebrate the completion of the work so far by inviting our citizens to a ride through the entire line.

August 11.—On Monday, August 9, 1831, the "De Witt Clinton," attached to a train of cars, passed over the road from plane to plane, to the delight of a large crowd assembled to witness the performance. The engine performed the entire route in less than one hour, including stoppages, and on a part of the road its speed was at the rate of thirty miles an hour.

August 27.—The company having received their locomotive from England by the "Mary Howland," it will, we understand, be in operation on the road in the course of a few days. It is called the "Robert Fulton."

September 3.—Another trial was made on Thursday with the locomotive "De Witt Clinton." It performed the passage from Schenectady to this city in fifty minutes. Among the passengers was Brigadier-General Scott, of the United States Army.

September 9.—The American locomotive "De Witt Clinton" came down yesterday morn-

ing in forty-six minutes. The fuel was wood. A trial of the English locomotive will probably be made on Tuesday next. The power and weight of this engine are double those of the American engine.

September 19.—Trials of the English locomotive were made on the 16th and 17th. They were, we understand, entirely successful, and particularly so with the use of anthracite coal. The engine was propelled with ease at the ratio of from fifteen to twenty miles an hour, and will commence her regular trips this day.

We will close our evidences in this chapter by giving a letter from Mr. Wm. Kemble, Superintendent and Manager of the West Point Foundry Works, in answer to our inquiries as to the first locomotives built in America.

MR. WM. H. BROWN:

DEAR SIR:—Your letter informs me that you are about to publish a history of the early locomotives built in America, and ask me for some particulars respecting the first locomotives built at our shops. It gives me great pleasure, sir, to comply with your wishes on that subject; and I will commence by saying that the first locomotive ever run in this country was imported from England, and was called the "Stourbridge Lion." It came out in the spring of 1829; was in charge of Horatio Allen, Esq.; was landed from the ship "John Jay" at our wharf, and put up at our works. This locomotive was for the Delaware and Hudson Canal and Railroad Company.

The first locomotive ever constructed in this country, and for actual service upon a railroad, was undoubtedly built at our works. It was contracted for by Colonel E. L. Miller, of Charleston, South Carolina, for the South Carolina Railroad. It was commenced early in the summer of 1830, and completed and sent to Charleston, by the ship "Niagara," in the month of October of that year. This engine was called the "Best Friend."

The second locomotive constructed in America was also built at our works, and for the South Carolina Railroad. This engine was contracted for by Horatio Allen, Esq., the chief engineer of the road, and was built from drawings sent out by him. This locomotive was called the "West Point." It was finished and sent to Charleston, by the ship "Lafayette," in February, 1831.

A third locomotive was soon after constructed at our shops. This machine was contracted for by John B. Jervis, Esq., chief engineer of the Mohawk and Hudson Railroad, and was finished and forwarded to Albany in June, or early in July, 1831. This engine was called the "De Witt Clinton." Mr. David Matthew, who had charge of the hands fitting up all these engines, went on to Albany with the "Clinton," to put it on the road and to run it.

There can be no doubt whatever but that these locomotives, the "Best Friend," the "West Point," and the "De Witt Clinton," were the first ever built in America for actual service on a railroad. Prior to, and during that time, from 1829 to 1831, several small machines for experimental purposes were built and tried, but the three above named were the first ordered to be built in America for actual service upon a railroad.

Hoping these facts may be of service to you in your forthcoming work, I remain, dear sir,

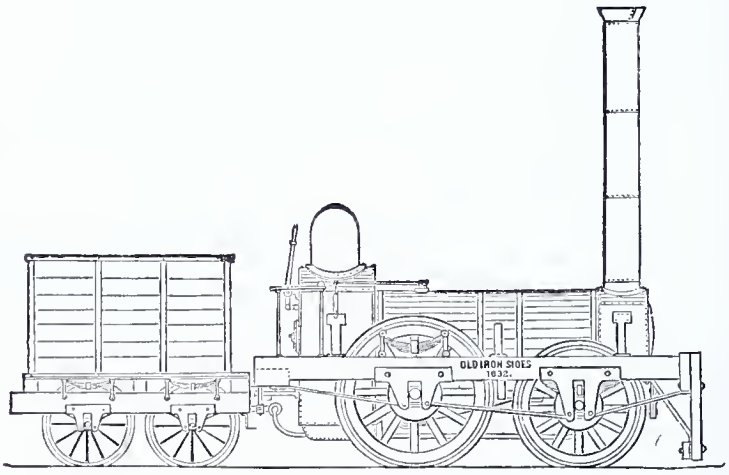
Yours respectfully,

WILLIAM KEMBLE.

CHAPTER XII.

"OLD IRONSIDES," BY BALDWIN, OF PHILADELPHIA.

FROM the very successful performances of the small model locomotive built by Mr. M. W. Baldwin, of Philadelphia, and exhibited in the Museum of that city, he was induced, in connection with his brother-in-law, Mr. Tyler, to undertake the construction of a locomotive of a large size, and with a capacity to perform all the requirements upon a railroad in the transportation of passengers and freight. This determination was most successfully carried out, as the result fully shows, in the performance of the locomotive "Old Ironsides," which, upon trial, December, 1832, on the Philadelphia, Germantown and Norristown



"OLD IRONSIDES."

Railroad, came up to all the requirements desired, and is the very first beginning of the well-known Baldwin Locomotive Works in Philadelphia, undoubtedly the most extensive in the United States.

The accompanying plate is a correct representation of the first Baldwin locomotive, "Old Ironsides," and was presented to us by the gentlemanly proprietors of the present establishment expressly for this work. We extract from two of the leading papers of the city the following description of its performance on the first trial trip:

United States Gazette, November 24, 1832.

LOCOMOTIVE.—A most gratifying experiment was made yesterday on the Germantown and Norristown Railroad with the locomotive engine and tender built by Mr. Baldwin, of this city, which was for the first time placed on the road. The engine travelled about six miles, working with perfect accuracy and ease in all its parts and with great velocity.

From the Philadelphia Chronicle, same date.

It gives us pleasure to state that the locomotive engine built by Mr. M. W. Baldwin, of this city, has proved highly successful. In the presence of several gentlemen of science and information yesterday, after the regular horse train had arrived, and the track all clear, the firing was commenced and steam raised in twenty minutes. The engine, with the tender, moved from the depot in beautiful style, and worked with great ease and regularity. She proceeded about one and a half miles beyond Union Tavern, and returned immediately—six miles—at a speed of twenty-eight miles to the hour. On subsequent trials the "Old Ironsides," as Mr. Baldwin named the machine, after several successful improvements, attained a speed of thirty miles per hour, with the usual train attached.

During the Centennial Exhibition, and frequently since its close, the author has been asked if the locomotive at the Exhibition called the "John Bull," and said to have been imported from England for the Camden and Amboy Railroad in 1831, was really the first locomotive ever run in America. Again, if the locomotive at the Exhibition said to be the first machine built in America, and constructed by Phineas Davis for the Baltimore and Ohio Railroad, was really the first locomotive built in America. And he has also often been asked if Mr. Matthew Baldwin, of Philadelphia, did not build the first locomotive in America, which was run upon the Germantown and Norristown Railroad from their old depot, corner of Ninth and Green streets.

To all these questions we have answered "No."

The machine at the Exhibition called the "John Bull" was rather indefinitely announced in some of the journals of the day when first spoken of as being prepared for the coming Exhibition. It was described as the first locomotive built by Stephenson at Newcastle, England, in 1831, for the Camden and Amboy Railroad, leaving the readers and the visitors to the Exhibition to infer, as many did, and no doubt yet believe, was the first locomotive in America, and the very first run upon a railroad in this country, when, in reality, it was merely the first locomotive from England for the Camden and Amboy Railroad, and that only.

With regard to the locomotive at the Exhibition, built by Phineas Davis for the Baltimore and Ohio Railroad, we are prepared to show that it was built and run as late as 1835. B. H. Latrobe, Esq., chief engineer of the Baltimore and Ohio Railroad, who furnished the author with the sketch and description of the Peter Cooper locomotive and race with a horse-car in the summer of 1830, also furnishes an extract from the records of that company as follows:

OFFICE OF THE BALTIMORE AND OHIO RAILROAD, *July* 4, 1831.

The Baltimore and Ohio Railroad Company being desirous of obtaining a supply of locomotive engines of American manufacture adapted to their road, the president and directors hereby give public notice that they will pay the sum of four thousand dollars for the most approved engine which shall be delivered for trial upon the road on or before the 1st of June, 1831; and they will also pay three thousand five hundred dollars for the engine

which shall be adjudged the next best, subject to the following conditions [Then follow some nine stipulations, and closes with the following]: The engines which may appear to offer the greatest advantages will be subjected to the performance of thirty days' regular work on the road, at the end of which time, if they have proved durable and continue to be capable of performing agreeably to the first exhibition, as aforesaid, they will be received and paid for as here stipulated.

(Signed) P. E. THOMAS, *President.*

Mr. Latrobe also says in his letter that Phineas Davis', or rather Davis & Gartner's engine, built at York, Pennsylvania, was the only one which came up to the requirements of the company. He further states that this advertisement of the Baltimore and Ohio Railroad brought upon the road an odd collection of four or five original American ideas, of which it is much to be regretted that photographs or detailed drawings have not been preserved. The engine which took the prize, built by Mr. Davis, was the model for those built after it for three or four years. In an experiment with one of these in 1835 Mr. Davis lost his life by an accident, much to the regret of a large circle of friends, and his loss was seriously felt by the Baltimore and Ohio Railroad.

In conclusion, we have shown in our description of Baldwin's first locomotive, "Old Ironsides," that it was built and first run upon the Germantown and Norristown Railroad in the winter of 1832, more than one year after the "Best Friend" (which was built at the West Point Foundry, New York) was run upon the South Carolina Railroad.

CHAPTER XIII.

FIRST DELIBERATIONS ON LOCOMOTIVE POWER.

IN 1812, when De Witt Clinton was urging the passage, through the Legislature of New York, of the act for the construction of the Erie Canal, Colonel Stevens, of Hoboken, astonished that body by announcing that he could build a railroad at a much less cost than the proposed canal, and on which the transportation, by means of cars drawn by steam locomotives, could be carried on at a considerably cheaper rate, and at a much higher degree of speed than was possible on any canal. He laid before them the results of his numerous and long-continued researches, but his enemies openly laughed at him, and called him a maniac, and even some of his best friends regarded him as a man who had lost himself in experimental science. Had he lived in the days of poor Solomon de Cause or of Friar Bacon, he would probably, like those eminent men, have been consigned to a dungeon. The nineteenth cen-

tury contented itself with sneering at him as a visionary, and refused to entertain his propositions. His distinguished, wise, and sensible friend, Chancellor Livingston, in a letter addressed to Stevens, dated at Albany, March 2, 1811, only a year before, expresses his opinion of the railroad locomotive schemes of which his friend was so strenuous an advocate. The chancellor thus writes:

I had before read of your very ingenious proposition as to railway communication. I fear, however, on mature reflection, that they will be liable to serious objections, and ultimately prove more expensive than a canal. They must be double, so as to prevent the danger of two such heavy bodies meeting. The wall on which they are placed must be at least four feet below the surface, to avoid frost, and three feet above, to avoid snow, and must be clasped with iron, and even then would hardly sustain so heavy a weight as you propose moving at the rate of four miles an hour on wheels. As to wood, it would not last a week. They must be covered with iron, and that, too, very thick and strong. The means of stopping these heavy carriages without a great shock, and of preventing them from running on each other—for there would be many running on the road at once—would be very difficult. In case of accidental stops or necessary stays to take wood or water, etc., many accidents would happen. The carriage of condensing water would be very troublesome. Upon the whole, I fear the expense would be much greater than that of canals, without being so convenient.

And yet, only fourteen years afterward, such was the rapid development of the steam locomotive, the Legislature of the same State granted a charter incorporating the Mohawk and Hudson Railroad, a line seventeen miles long, running between Albany and Schenectady; and there are now no less than three thousand one hundred and ninety-five miles of railway in the State of New York alone.

Next to Colonel Stevens, and as early as 1819, we have in the United States another advocate for railroads, with steam locomotion. We learn, by an extract from the current news of that day, copied from a literary paper called *The Villager*, that the following memorial was presented to Congress at the previous session, which was referred to the Committee on Commerce and Manufactures. The following is a copy of the document:

The memorial of Benjamin Dearborn, of Boston, respectfully represents that he has devised in theory a mode of propelling wheel-carriages in a manner probably unknown in any country; and has perfectly satisfied his own mind of the practicability of conveying mails and passengers with such celerity as has never before been accomplished, and with complete security from robberies on the highway.

For obtaining these results, he relies on carriages propelled by steam, on level railroads, and contemplates that they be furnished with accommodations for passengers to take their meals and their rest during the passage, as in packets; that they be sufficiently high for persons to walk in without stooping, and so capacious as to accommodate twenty, thirty, or more passengers, with their baggage.

The inequalities of the earth's surface will require levels of various elevations in the railroads; and your memorialist has devised means which he believes will be completely

effectual for lifting the carriage, by the inherent power of its machinery, from one level to another, as also for the passage of carriages by each other on the same road. And he feels confident that whenever such an establishment shall be advanced to its most improved state, the carriages will move with a rapidity at least equal to a mile in three minutes.

Protection from the attacks of assailants will be insured, not only by the celerity of the movement, but by weapons of defence belonging to the carriage, and always kept ready in it to be wielded by the number of passengers constantly travelling in this spacious vehicle, where they would have liberty to stand erect, and to exercise their arms in their own defence.

The practicability of running steam-carriages on the common road was long since advocated in a publication by that ingenious and useful citizen, Oliver Evans. Your memorialist, therefore, does not assume the merit of originating the idea of steam-carriages, but only of modifying the system in such a manner as to produce the results here stated, which could not be effected on a common road.

Relying upon the candor of the national council, this memorial is laid before them with the desire that ingenious and scientific artists, in the different sections of our country, may be consulted, by direction of Congress, on the probability of accomplishing the purposes here anticipated; and that an experiment be made, if sanctioned by their favorable opinions; for if the design can be put into successful operation by the government, a great revenue would eventually be derived from the establishment, besides the advantages before enumerated.

We never have heard that any report was made by the committee respecting it; yet all these results have been signally realized within a little more than a third of a century.

Only as late as 1837 or '38, forty years ago, the editor of a well-known and popular magazine in New York, the *Knickerbocker*, in noticing in its columns Parker's "Journal of an Exploring Tour beyond the Rocky Mountains," predicted the ultimate building of a railroad to the Pacific. After briefly extracting some of the scenes and interesting objects, together with the adventures described by the explorers, before and after crossing the "Black Hills," he thus writes:

There would seem to be no insurmountable barrier to the construction of a railroad from the Atlantic to the Pacific. No greater elevations would need to be overcome, than have been surmounted on the Portage and Ohio Railroad. And the work will be accomplished. Let this prediction be marked. This great chain of communication will be made with links of iron. The treasures of the earth in that wide region are not destined to be lost. The mountains of coal, the vast meadow seas, the fields of salt, the mighty forests, with their trees two hundred and fifty feet in height, the stores of magnesia, the crystallized lakes of valuable salts—these were not formed to be unemployed and wasted. The reader is now living who will make a railroad trip across the vast continent.

The granite mountain will melt before the hand of enterprise; valleys will be raised, and the unwearying fire-steed will spout his hot, white breath where silence has reigned since the morning hymn of young Creation was pealed over mountain, flood, and field. The mammoth's bone and the bison's horn, buried for centuries, and long since turned to stone, will be bared to the day by the laborers of the Atlantic and Pacific Railroad Company; rocks which stand now as on the night when Noah's deluge first dried, will heave beneath the action of "villanous saltpetre;" and when the prairie stretches away "like the round ocean," girded with the sky, with its wood-fringed streams, its flower-enamelled turf, and its herds of startled buffaloes, shall sweep the long, hissing train of cars, crowded

HENRY G RAWORTH,
The oldest engineer in America, now living.

ADAM PERRY,
23 years Mr. Rayworth's fireman.

with passengers for the Pacific seaboard. The very realms of Chaos and Old Night will be invaded; while in place of the roar of wild beasts, or howl of wild Indians, will be heard the lowing of herds, the bleating of flocks; the plough will cleave the sods of many a rich valley and fruitful hill, while from many a dark bosom shall go up the pure prayer to the Great Spirit.

The foregoing passage was copied at the time of its publication into one or two metropolitan daily journals, and, while its manner was courteously commended, it was pronounced visionary and absurd in its speculations; and yet, ere a dozen years had passed, such were the manifest improvements in railroads and locomotives, that the very ablest and most influential of these journals expressed its convictions that the time was close at hand when the nation would put forth its strength and commence the greatest and most important work ever devised or contemplated by man. A national railroad, designed to connect the inhabitants on our Atlantic border with our colonists lying on the coast of the Pacific; a national railroad traversing a vast continent, and passing over two thousand miles of wilderness still in the undisputed possession of the red-man, the buffalo, and the bear; a national railroad that shall become the highway of nations for the commerce of the Eastern world, and make New York its great depot; a national railroad, the cost of which will not fall much short of a hundred million dollars, and which will not really cost the nation one dollar, but increase its natural revenues more than five times its cost, by reason of the value it will impart to our public domain—such an enterprise is, indeed, a project worthy of the age in which we live.

RECAPITULATION.

WE trust that we have now faithfully performed the task undertaken by us when we commenced these pages; and we believe that our readers will not entertain a doubt, from the chain of authentic and reliable evidence we have brought before them, that the first locomotive ever run upon a railroad in this country was the "Stourbridge Lion," imported from England in 1829. We have shown that this machine was ordered by John B. Jervis, Esq., the chief engineer of the Delaware and Hudson Canal and Railroad Company, to be used upon their road, which connected with their canal; that Horatio Allen, Esq., the assistant-engineer under Mr. Jervis, was on a visit to England, and witnessed the experiments then made in the contest for the prize of £500 offered by the Liverpool and Manchester Railroad for the locomotive that should perform certain requisitions; that Mr. Allen was instructed by Mr. Jervis to contract for three locomotives for the Delaware and Hudson Railroad; that the first of these engines, the "Stourbridge Lion," arrived in the city of

New York by the ship "John Jay" on the 17th of May, 1829, and was set up by Mr. Matthew in the yard of the West Point Foundry Works, then in the city, and, with steam from the shops, publicly exhibited for several weeks, and visited by thousands attracted by the novelty of the machine.

We have shown that the "Stourbridge Lion" was next shipped up the Hudson River to Rondout, where it arrived on the 4th of July, 1829, and thence forwarded, by the Delaware and Hudson Canal, to Honesdale, where it was landed on the 23d of July, was immediately placed upon the company's railroad, and made its first trial-trip under steam on Saturday, the 8th day of August, 1829, in the presence of several thousand spectators attracted from all parts of the country to witness the advent of the first locomotive in America. We have also shown that on that memorable occasion Mr. Allen stood alone upon the engine, and with his own hand opened the valve that gave the impulse to the driving-wheel that made the first revolution upon a railroad in America.

From the most reliable sources our readers have been informed that the first locomotive ever built in America was a "Liliputian" affair, made for experimental purposes alone. It was nevertheless a locomotive, and was built by Peter Cooper, Esq., of New York, well and most favorably known as the founder and patron of the Cooper Institute of that city. This little machine of Mr. Cooper's (we call it little because it weighed less than a ton) was expressly built to demonstrate a principle upon the Baltimore and Ohio Railroad with regard to the capability of a locomotive to sustain itself upon the track in running curves—a much and almost universally disputed point among engineers and scientific men of that early period in railroad experience.

From the evidences we have given, our readers must now be convinced that the very first locomotive built in America for actual service was ordered by and made for the South Carolina Railroad, then just commenced, and but a few miles completed. This first locomotive was contracted for by E. L. Miller, Esq., an enterprising gentleman of Charleston, who had visited England and witnessed the contest for the £500 prize. Mr. Miller had his locomotive constructed at the West Point Foundry Works in the city of New York. Mr. David Matthew, then a foreman in the machine-shops, had charge of the hands fitting up this machine or locomotive. It was called by Mr. Miller the "Best Friend, of Charleston," and was forwarded by ship "Niagara," and arrived in Charleston on the 23d of October, 1830. No person accompanied this locomotive from the works in New York to put it up and try its abilities upon a road. That duty was performed by Mr. Julius D. Petsch, foreman of Mr. Thomas Dotterer's machine-shops in Charleston, assisted by Nicholas W. Darrell, a young man just out of his time. The first experi-

ments with a train, we have shown, took place on the 2d of November, and again on the 14th and 15th of December, 1830, on which last trial-trip before the public, as from the first, the machine was in charge of Mr. Darrell as engineer, who continued to act in that capacity until the June following, when, through the ignorance of the negro fireman, the "Best Friend" exploded, severely scalding Mr. Darrell, and resulting finally in the death of the negro from his injuries.

We have given evidence to show that the second locomotive built in America was likewise constructed at the West Point Foundry Works, and for the South Carolina Railroad. This machine was ordered by Horatio Allen, Esq., the chief engineer of the road, and made from plans and drawings sent out by him. The engine was completed and forwarded by the ship "Lafayette," and arrived in Charleston on the 28th day of February, 1831, and made her first successful trial-trip over the road on the 5th of March, 1831. This locomotive was called the "West Point," and was in charge of Mr. Darrell, who, meantime, had recovered from the injuries received by the explosion of the "Best Friend." Mr. David Matthew also had charge of the hands fitting up the "West Point," as well as the "Best Friend," at the Foundry Works, New York.

We have produced satisfactory evidence to prove that the third successful locomotive constructed in America was the "De Witt Clinton," built also at the West Point Works for the Mohawk and Hudson Railroad. This engine was completed and taken to Albany the latter part of June, 1831, in charge of Mr. David Matthew, who put it upon the road, and, after several experimental trials in July, made the first excursion-trip with a train of cars on the 9th day of August, 1831, as represented in the author's sketch taken upon the spot just as the train was about to start.

We have shown that about this time (midsummer, 1831) the locomotive built by Mr. Davis at York, Pennsylvania, was put upon the Baltimore and Ohio Railroad as the most effective of the number presented at the trial for the prize offered by that company.

We have shown that, as early as 1831, the first eight-wheeled locomotive ever built, either in England or America, was constructed from plans by Horatio Allen, Esq., and put upon the South Carolina Railroad. This machine was made at the West Point Foundry Works, and forwarded to Charleston in charge of Mr. John Degnon, who ran it for a short time until accepted by the road, and then it was placed in charge of Mr. Darrell.

We have, in the course of our narrative, shown that the South Carolina Railroad was the first railroad in the world built expressly for locomotive-power; that when Mr. Bennett's famous resolution to that effect was unanimously adopted by its board of directors, the directors of the road

from Liverpool to Manchester, in England, just completed, had not yet determined what kind of power should be used upon the road. A majority of the committee of engineers, appointed to examine and report upon that important matter, were in favor of stationary engines with long chains or ropes to draw the trains over the road. George Stephenson, being one of their number, was alone in favor of the locomotive. Again, we show that the first one hundred consecutive miles of iron rails upon a road was laid upon the South Carolina Railroad. These statements, though startling to the minds of many, are nevertheless true, and can be sustained by the best authority, and without a shadow of doubt.

Mr. William Kemble, who was in charge of the West Point Works during the year 1829, and afterward while these machines were built, in his letter to the author, fully sustains all the facts connected with the early history of the English engine, "Stourbridge Lion," and the first three American engines built in the United States, viz., the "Best Friend," the "West Point," and the "De Witt Clinton;" and no further evidence is required to establish these facts.

CHAPTER XIV.

CONCLUSION.

DURING the last half century, while railroads were stretching forth their iron arms over vast sections of our country, and, indeed, of the civilized world, and even through the wild and thinly-populated domains of the savage, where exist vast forests and hitherto pathless deserts of sand, locomotives—those absolute essentials to the economy and success of these enterprises—were in like manner making giant strides in the way of improvement, from the "Rocket," of Stephenson, in England, and the "Best Friend," of Charleston, in this country, to the perfection which characterizes the first-class locomotive of the present day. When we compare the performances of these and their readiness, at all hours and under all circumstances, to brave the torrents, the winds, and the snows of the most terrific tempest, we cannot but call to mind an advertisement in a Philadelphia paper in 1832, which we extract just as it appeared. It will, no doubt, draw a smile upon the faces of our present locomotive engineers. It reads thus: "NOTICE TO THE PUBLIC.—The engine, with a train of cars, will be run daily, commencing this day, when the weather is fair. When the weather is not fair, the horses will draw the cars. Passengers are requested to be punctual at the hour of starting."

When we contemplate the rapid march made, upon this continent alone, in railroads and locomotives, it seems like the work of enchantment. The mind is bewildered and almost carried away in its efforts to keep pace with its giant strides. Let us (by way of illustration) conduct our reader for a moment to some imaginary eminence, from which his eye could command in one sweep the entire surface of our country. Let him turn his gaze toward the north, the south, the east, or the west, even across the Rocky mountains to the shores of the broad Pacific, and he will behold a scene of life and industry which few could believe had been developed in less than half a century. And then let him predict the future, if he can. Lead his mind back to the period, just forty-five years ago, when the first locomotive built in America for actual service upon a railroad, and named the "Best Friend," of Charleston, started out upon its solitary journey, a few miles only in extent, upon the unfinished track of the South Carolina Railroad, the second railroad commenced in this country for commercial purposes, and the first railroad in the world built expressly for locomotive power. Let him contemplate this scene for a moment, then turn his mind to the one presented to him at the present day. All over the wide expanse of our Union behold the countless railroads extending for thousands of miles in every direction, bearing upon their rails their droves of iron horses, of every imaginary form and pattern, dashing with lightning speed from city to city, with their long and heavy trains of living, breathing human creatures, or with their lengthened trains of freight cars, loaded with thousands of tons of the products of the industry of the people, adding millions to the trade and commerce of the nation—rushing on, overcoming all obstacles, crossing wide, deep, and rapid rivers, ascending the steepest grades, or diving headlong through lengthened tunnels, then ask the beholder if we have yet reached the summit; the consummation, the ultimatum of this great instrumentality in the advancement of the trade and commerce of our prosperous Republic. He will answer "No!" No one can tell, no one can predict, no mind can conceive, no figures can compute, the sum of what will be the progress in the next fifty years of this great achievement of the present century, in the railroad and its iron steed.

Less than fifty years ago an imported locomotive, weighing not a half dozen tons, made the first experimental trip, of a few miles only, upon a coal road belonging to the Delaware and Hudson Canal Company. The machine proved to be too heavy for the structure and its innumerable trestles and bridges, and it was abandoned, and the road remodelled into a graded one, with stationary engines, as was recommended about the same time (1829) by the most prominent English engineers to the directors of the Liverpool and Manchester Railroad, in preference to the

locomotive system, which they looked upon as impracticable. Not the least daunted or discouraged by the failure of this first experiment at home, and the opinions and examples before them in England, the directors of the South Carolina Railroad, at their first regular meeting, only four days after their organization, passed unanimously that memorable resolution in these very words: "That their railroad should be built for locomotive power alone."

Their example was followed in quick succession on several railroads soon after in progress of construction, and continued to spread with unprecedented rapidity to the present day.

We cannot quit the subject without drawing before our readers a comparison between the locomotive passenger trains of the present day and those of forty years ago, when the old-fashioned stage-coach body pattern was the model of the first-class passenger cars, as represented in the author's sketch, in this volume, of the "De Witt Clinton" and train.

In no other language, perhaps, can we better illustrate the wonderful strides made in the march of improvement, even in the face of all the discouraging predictions of the ultimate failure of the railroad system, than by copying from a number of the *Virginia Gazette*, in 1836, the following notice, even after the Baltimore and Ohio Railroad had reached as far as Ellicott's Mills: "The Baltimore and Ohio Wagon Company, with a capital of two hundred thousand dollars (one-fourth of which is paid in), transport goods and produce between Wheeling and Baltimore. One wagon departs and arrives daily from each of these places, with a load weighing from two and a quarter to two and a half tons, and averaging eight days upon the road. Arrangements are in progress to increase the number of daily arrivals and departures from one to three wagons, and eventually to five." Were a new edition to be prepared for the *Virginia Gazette*, and the paragraph relating to the intercourse of the two cities (Wheeling and Baltimore) to be placed side by side, how modest would appear to have been the conception of the author only sixteen years ago.

The arrangements to which we refer, carried out by a different company, it is true, but still the arrangements uniting Wheeling and Baltimore, have resulted in the existence of a company, with a capital of twelve millions of dollars, all paid in, which, when completed, as it now is, represents a capital of twenty millions, having the transportation daily of over one thousand tons of goods and merchandise between the Ohio and Baltimore in thirty-six hours.

Again looking back to the beginning of this great system in 1830 and '31, we will compare them with the announcements we see daily posted in our hotels and public places—"Through tickets for sale for the round trip

from New York to San Francisco, passing through all the intermediate cities on the plains, and returning, with beautiful and comfortable parlor, dining-room, and sleeping-cars throughout the entire route."

And yet another—"Great excursion to Europe and the East from New York, visiting London, the seat of the late war in France, Switzerland, Rome, Naples, Pompeii, Vesuvius, Greece, the Pyramids, returning to Venice and Verona to spend the carnival there, and over Paris to New York."

And all this the work of the railroad and its great auxiliary, the locomotive, brought about in less than half a century.

Only as late as 1837 the project was advanced to build a railroad to the Pacific by some of the leading journals of the day in the strongest language, and although the articles were copied at the time in one or two metropolitan daily journals and the measure courteously commended, yet pronounced visionary and absurd in its speculations. Only a dozen years had passed; such were the manifest improvements in railroads and locomotives, that the very ablest of these journals expressed its convictions that the time was come when the nation should put forth its strength and commence the greatest work ever devised or contemplated by man. And it has since been carried out to the very letter.

We will close our present history with the remarks we know our readers will admire with us, made by the eloquent Missouri Senator, Thomas H. Benton, when that subject was before the Pacific Railroad Convention held in St. Louis:

We live in extraordinary times, and are called upon to elevate ourselves to the grandeur of the occasion. Three and a half centuries ago the great Columbus—the man who was afterwards carried home in chains from the New World which he had discovered—this great Columbus, in the year 1492, departed from Europe to arrive in the East by going to the West. It was a sublime conception. He was in the line of success, when the intervention of two continents, not dreamed of before, arrested his progress. Now, in the nineteenth century, mechanical genius enables the great design to be fulfilled. In the beginning, and in barbarous ages, the sea was a barrier to the intercourse of nations; it separated nations. Mechanical genius, in inventing the ship, converted that barrier into a facility. Then land and continents became the obstruction. The two Americas intervening have prevented Europe and Asia from communicating in the straight line. For three centuries and a half this obstacle has frustrated the grand design of Columbus. Now, in our day, mechanical genius has again triumphed over the obstacles of Nature, and converted into a facility that which had so long been an impassable obstacle. The steam-car has worked upon the land, and among enlightened nations, and to a degree far transcending it, the miracle which the ship, in barbarous ages, worked upon the ocean. The land has now become the facility for the most distant communications, the conveyance being invented which annihilates both time and space. We hold the intervening land; we hold the obstacle which stopped Columbus. We are in the line between Europe and Asia.

We have it in our power to remove that obstacle, to convert it into a facility, and to carry him on to his land of promise and of hope with a rapidity, a precision, and a safety unknown to all ocean navigation. A king and a queen started him upon his great enter-

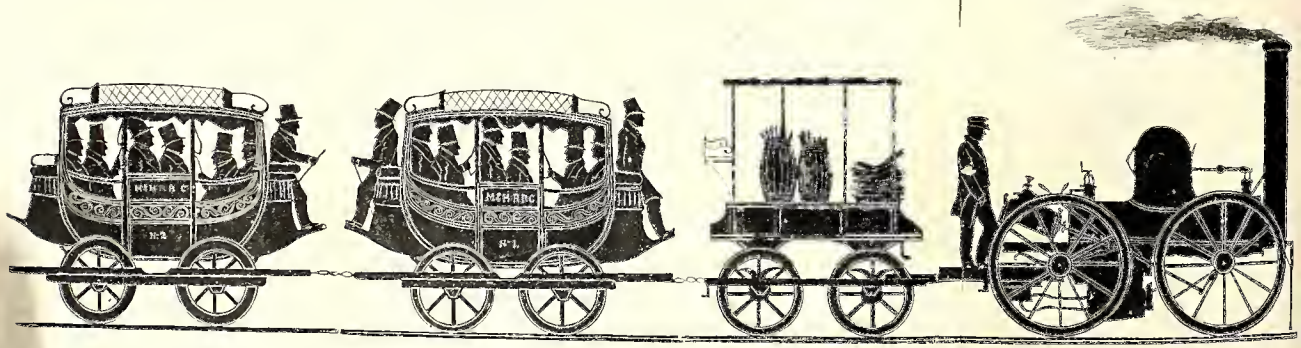
prise; it lies in the hands of a republic to complete it. It is in our hands—we, the people of the United States, of this first half of the nineteenth century. Let us ris [illegible] of the occasion. Let us complete the grand design of Columbus by putting Europe and Asia into communication, and that to our advantage, through the heart of our own country. Let us give to his ships, converted into cars, a continuous course unknown to all former times. Let us make the iron road, and make it from sea to sea; States and individuals making it east of the Mississippi, the nation making it west. Let us now, in this convention, rise above everything sectional, personal, local; let us beseech the national legislature to build the great road upon the great national line which unites Europe and Asia—the line which will find on our continent the bay of San Francisco at one end, St. Louis in the middle, the national metropolis and great commercial emporiums at the other; and which shall be adorned with its crowning honor, the colossal statue of the great Columbus—whose design it accomplishes—hewn from the granite mass of a peak of the Rocky Mountains overlooking the road, the mountain itself the pedestal, and the statue a part of the mountain, pointing, with outstretched arm, to the western horizon, and saying to the flying passenger, "There is the East; there is India!"

All this has been consummated. And is it all that is to be? We answer, No! Almost every daily revolution of the earth upon its axis develops some new idea, some improvement upon what has already been accomplished in bringing the railroad and its auxiliary, the locomotive, nearer and nearer to a state of perfection.

The locomotive is truly the king of machines and a permanent realization of the genii of the Eastern fable, whose supernatural powers were at the command of man. When the next fifty years have rolled around, how little will men think of what we now call distance. The term will be obsolete in our vocabulary, and become entirely forgotten.

THE FIRST LOCOMOTIVE AND TRAIN OF PASSENGER-CARS EVER RUN IN THE STATE OF NEW YORK.

The American Locomotive "De Witt Clinton," Mr. David Matthew, Engineer.



The locomotive "De Witt Clinton" was ordered by John B. Jervis, chief engineer of the Mohawk and Hudson Railroad, and was the third locomotive built in America for actual service upon a railroad. The machine was made at the West Point Foundery Works in New York, taken to Albany in the latter part of June, 1831, and was put upon the road and run by David Matthew. The first experimental trial-trip was made on the 5th of July, and others at different times during that month. The first excursion-trip, with a train of passenger-cars, was made from Albany to Schenectady on August 9, 1831, on which occasion the author of this History of the Early Locomotives in America role in one of the cars (only the first two are represented above), and before the train started made the sketch as it appears above, which was pronounced a truthful representation of the locomotive, tender, and the first two of the number of cars in the train, and correct likenesses of the engineer and passengers represented in the cars. Some of them are yet living, as their letters in this work will show. The picture was cut out of black paper with a pair of scissors, a peculiar art with which the author was gifted from his earliest boyhood. The original picture was presented by the author to the Connecticut Historical Society; it was about six feet in length, and is yet preserved by the society and highly valued for its antiquity and truthfulness. The names of the engineer and passengers are as follows, commencing at the engine: David Matthew, engineer; first car, Erastus Corning, Esq., Mr. Lansing, ex-Governor Yates, J. J. Boyd, Esq., Thurlow Weed, Esq., Mr. John Miller, Mr. Van Zant, Billy Waine, penny postman; second car, John Townsend, Esq., Major Meigs, old Hays, High-Constable of New York, Mr. Dudley, Jos. Alexander, of the Commercial Bank, Lewis Benedict, Esq., and J. J. Degraff. These likenesses were all readily recognized at the time they were taken—forty years ago. The outside seats were for the drivers when these cars had been drawn by horse-power, but on this occasion were occupied by the excursionists.

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